SPRINGFIELD WATER
AND SEWER COMMISSION

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Division of Watershed Management
627 Main Street, 2nd Floor
Worcester, MA 01608

March 31, 2015

Subject: Springfield Water and Sewer Commission Annual CSO and CMOM Report

To Whom It May Concern:

Pursuant to NPDES Permit No. MA0103331 attached please find the 2014 CSO Annual Report for the Springfield Water and Sewer Commission (Commission) as well as the Inflow and Infiltration information for the Springfield Regional Wastewater Treatment Facility.

Pursuant to Administrative Order Docket No. 14-007 this submittal also includes the Annual CMOM Program Report.

In CY2014 the Commission advanced several components of the approved Integrated Wastewater Plan (IWP) as it relates to all wastewater infrastructure. The Capital Projects and Operations and Maintenance Budgets can he found in this report.

In 2014 the Commission continued construction of the Washburn Street CSO Project. Substantial completion was not granted due to construction issues which are currently being resolved procedurally through the Contract as well as legal avenues. Additionally, system hydraulic performance in a portion of the Washburn sub-catchment

area has been found to not be adequate as it relates to storms outside of the design storm series in the Typical Year. As a result, the Commission has initiated a design and construction project to support alleviating these issues. This project is underway and is in the FY2015 budget.

In 2014 design of repair and or replacement of CSO outfalls for CSO 012, CSO 013, and CSO 0018 was completed. These outfalls and outfall pipes are actively failing and pose a significant risk and consequence of failure should they fail any further. Outfalls for CSO 012 and CSO 013 are part of the federal Flood Control System which serves Springfield and is administered by the United States Army Corps of Engineers. Construction of these repairs/replacement will be initiated in CY 2015.

In 2014 the Commission continued its comprehensive Collection System Asset Management Program. The project includes cleaning and assessment of collection system assets. This program has been the foundation of the CSO program as it has provided critical information used in the decision making process for CSO and other projects. In 2014 the Commission has completed assessment and cleaning of approximately 60% of the entire system. In 2015 the program will continue.

In 2014 the Commission completed the design of the Main Interceptor Rehabilitation Project to repair sections of the Main Intercepting Sewer that are in immediate risk of failure. The project is being bid and construction will begin in 2015.

In 2014 the Commission conducted a temporary metering program to re-calibrate the Collection System Model and to reflect known changes in the collection system.

Also in 2014, an electrical system study at the Springfield Regional Wastewater Treatment Facility (SRWTF) was completed. The report has identified significant issues which the Commission will be addressing in 2015 and beyond. Also at the SRWTF capital projects to improve secondary aeration and hydraulics were initiated and construction is underway. Both projects present opportunities in gaining process flexibility and efficiency while providing utility savings.

Each year the Commission undertakes system improvement projects that replace existing water and sewer system components. In 2014 the Commission was in construction of several projects associated with failing sewers. These projects can be found in the Capital Plan attached later in sections of this report.

In 2015 the Commission will be initiating the Preliminary Design of the York Street Pump Station and Connecticut River Crossing as identified in the IWP. We anticipate that completion of Final Design is on schedule, however initiation of the Basis of Design Report (see IWP Work Plan) has been delayed due to procurement issues associated with expiring contracts and the process of hiring engineering firms as it relates to Massachusetts procurement law. We anticipate awarding new engineering contracts in June of 2015.

The Commission is pleased to be implementing its Integrated Wastewater Plan and submitting its first annual report. We believe that having a comprehensive plan will help provide a clear path to regulatory compliance and sustainable renewal and operation of our sewer system. In 2015 we plan on reorganizing the report to include updates to the information provided herein, as well updates to the Financial Capability Analysis and Capital Planning Program. As part of this we will integrate results of further assessments of the collection system and treatment plant, a review of any regulatory changes impacting operations, consideration of post construction modeling for CSO and other projects, and review of organizational priorities.

If you have any questions or comments concerning the attached information please do not hesitate to contact Joshua D. Schimmel at (413) 452-1333.

Respectfully

Springfield Water and Sewer Commission

Katherine J. Pedersen
Executive Director

Cc: Joshua D. Schimmel, Springfield Water and Sewer Commission

NPDES MA0103331
NINE MINIMUM CONTROLS
2014 ANNUAL STATUS REPORT

Introduction

The Springfield Water and Sewer Commission has developed and implemented a series of operating, maintenance and management strategies to minimize the impact of combined sewer overflows and their effects on receiving water quality. These strategies are outlined in the Springfield Water and Sewer Commission Nine Minimum Controls (NMC) Program document dated April 1997 and as updated in April 2010. It is the intent of this report to document the status of those activities conducted by the Springfield Water and Sewer Commission and United Water Environmental Services, Inc. in 2014 and to identify such future activities as are currently under review or planned. Attachment 1 of this report is the CSO Certification signed by the Commission's Contract Operator United Water LLC. Attachment 2 of this report is the Technical Memorandum concerning analyses performed on CSO metering, modeling, and rainfall. Attachment 3 of this report are Infiltration and Inflow letters from participating communities of the Springfield Regional Wastewater Treatment Plant. Attachment 4 is the 2014 CSO Discharge Summary.

The nine minimum controls and their status are as follows:

1. Proper Operation and Regular Maintenance Programs for the Sewer System and Combined Sewer Overflows

Operation and maintenance of the Commission's CSO program is conducted in accordance with the NPDES Permit and as outlined in the 1997 NMC Report and update as submitted in April 2010. The following details are provided to update the status of several key elements of a proper operations and maintenance program as outlined in the May 1995 USEPA Combined Sewer Overflows Guidance for Nine Minimum Controls. The elements updated include Organizational Responsibility, Resources (operations and maintenance budget), and Periodic Inspection and Maintenance.

A. Organizational Responsibility

The Commission holds the NPDES permit for operation of the CSOs. United Water Environmental Services, Inc. was brought under contract with the Commission in 2001 to conduct operations and maintenance activities for the Springfield Regional Wastewater Treatment Facility (SRWTF), portions of the sewer pump stations and interceptor sewers, and the permitted CSOs. An organizational chart depicting the Commission's collection system maintenance and operations group was submitted in April 2010 and subsequent CMOM submittals. Organizational responsibilities did not change in 2014.

B. Periodic Inspection and Maintenance

United Water Environmental Services, Inc. performs routine inspections of the CSOs twice-weekly as required in the NPDES permit. Certification has been submitted confirming that inspections for the calendar year 2014 were conducted, results were recorded, and records of the inspections were maintained as part of the annual report required by Part I.A.3 of the NPDES Permit being submitted concurrently with this report.

a. Routine inspection, maintenance, and investigation of the Connecticut River Interceptor Sewer included removal of sediment, monitoring level and velocity in the interceptor line, cleaning of heavy sediment from specific locations in the line, and cleaning the Clinton Street

Grit Pit. The full length of the Connecticut River Interceptor is periodically cleaned and then inspected using remote television cameras and sonar. Remote depth and velocity sensors were installed in the interceptor sewer in 2008 to evaluate sediment deposition rates and respond with cleaning before storage and flow is adversely impacted. The grit pit is inspected weekly and grit is removed every 90 days on average. In 2014, the CT River Interceptor was inspected and floatables cleaned from the interceptor per the O&M procedures in Appendix C of the CMOM annual report. 191 tons of grit was removed from the Clinton Street Grit Pit during 2014.

b. The Commission has continued to advance its sewer assessment program with continued inventory, cleaning, inspection, and assessment through contracted services. The program also includes GPS locations for inspected assets as well as GIS advancement. This program included inspection of both of the critical Connecticut River sewer crossings. The following is a breakdown of 2014 activities:

GPS Mapping	727 Manholes
Manhole Assessment (Combined)	1,687 Manholes
CCTV Inspection (Contract Estimated)	400,000 LF (Linear Feet)
Cleaning (Contract)	464,180 LF
Cleaning (SWSC)	229,608 LF
Grit Disposal (Contract)	570 Tons
Grit Disposal (SWSC)	562 Tons

C. Operations and Maintenance Resources

One of the key elements of a proper operations and maintenance program is allocation of resources. The Commission spent in excess of $12,000,000 in 2014 for CSO and sewer related operations, maintenance, and projects that contribute to the CSO system. Detailed capital and operations budgets are included in Appendix D of the CMOM Report. Expenditures for these activities will continue to expand through FY 2015. In addition, the Commission has systematically upgraded contracted services and in-house capabilities over the past 10 years to improve overall operations and maintenance of the CSO system. The following is a list of activities undertaken in 2014 that demonstrate the Commission's and United Water's commitment to continued operations and maintenance programs:

- The Commission and United Water completed modifications to the permanent flow metering and monitoring system for CSOs in September 2011 and have continuously monitored the metering system to understand its accuracy limitations.
- The Commission has conducted periodic temporary metering programs to validate the permanent metering system and update the Commission's hydraulic model.
- The Commission has contracted numerous pipeline assessment programs including combined sewer collection system assessments through CCTV contractors, high definition video, laser and sonar profile assessments, and zoom camera inspections.
- The Commission has contracted building inspections and confined space inspections to determine and eliminate inflow sources from separated areas that are tributary to combined sewers.
- The Commission and United Water have contracted services to clean the Connecticut River Interceptor (CRI).
- The Commission has contracted hydraulic and water quality modeling assessments for all areas of the combined sewer system and all receiving waters.
- The Commission has contracted services to inspect the CSO regulators in addition to those inspections required by NPDES Permit and conducted by United Water.

- The Commission developed an in-house CCTV and cleaning program which included procurement of a CCTV truck and hiring a CCTV crew, providing training and resources. The Commission uses these resources to perform PACP compliant inspections. The Commission has also upgraded its fleet with the addition of new equipment and vehicles used in the operation and maintenance of the collection system.
- The Commission procured Jet/Vac cleaning equipment and hired staff to perform prioritized cleaning assignments.
- The Commission continued its FOG Program Implementation, including staffing, regulation changes, and public education.
- The Commission has inspected the Main Intercepting Sewer in 2014 and has initiated a rehabilitation project for the lower section of the Main Intercepting Sewer.

D. CMOM Implementation

The Commission has continued implementation of a system wide CMOM Program that addresses the combined sewer system as well as the separated sewer system. The program included completion of a Self-Assessment Checklist in March 2009, development of a Corrective Action Plan in June 2009 and commitment of resources to address recommended corrective actions in accordance with the agreed upon schedule since that time. In 2010 the Commission and United Water continued to advance the CMOM Program. A 2010 CMOM Program Annual Report summarizing these activities was submitted pursuant to Administrative Consent Order Docket Number 08-037. In 2011 the Commission submitted the 3 year Update to the Self-Assessment Checklist in lieu of the annual report per Administrative Consent Order Docket Number 08-037. The 2014 CMOM Annual Report is attached to this report

E. Integrated GIS/Asset Management Program

The Commission has implemented an integrated GIS/Asset Management program to better document the condition of the existing combined sewer system and track maintenance and repair activities.

The program architecture consists of an ArcGIS platform integrated with a SQL Server database and DataStream CMMS application. The Commission has systematically built the GIS database for the critical components of the combined sewer collection system starting with existing record information and updating that with newer field data and as-built records from more recent system improvements. Work orders and maintenance activities, are recorded in the DataStream application.

Condition ratings for components of the combined sewer system that have been gathered through the contracted assessment work and in-house maintenance activities are linked to each asset and readily available to Commission staff and managers for analysis, prioritization, and remedial actions. The system has increased the efficiency with which the Commission can allocate resources and enhanced the combined sewer system's overall performance.

The Commission has advanced the integrated asset management system that considers the condition rating information currently in the GIS and assigns a risk rating to the asset based on probability and consequence of failure with the ultimate goal of developing a more automated approach to prioritizing collection sewer system improvements. The Commission intends to implement these activities as system wide programs for the collection system over time. This methodology has been a cornerstone of the development of the Commission's Integrated Long Term CSO Control Plan which was submitted in 2012 and later updated as an Integrated Wastewater Plan (IWP). The IWP is currently being implemented.

The Commission has also advanced a systematic program to convert approximately 25,000 record drawings into a digital archive to be linked to the GIS system being developed and also scanned 36,000 sewer service cards into its electronic database in 2013.

F. Planned Maintenance Activities

United Water Environmental Services, Inc. performs a program of planned and preventative maintenance activities at the pumping stations, and headworks facility to ensure maximization of flows to the wastewater treatment plant.

United Water Environmental Services, Inc. has certified, under separate letter, to the Springfield Water and Sewer Commission that inspections for calendar year 2014 were conducted, results recorded and records maintained.

2. Maximum Use of the Collection System for Storage

A. United Water Environmental Services, Inc. maintains pump station wet well levels to maximize storage in the collection system without causing potential for damage to persons and/or property.

The Springfield Water and Sewer Commission (SWSC) has completed or initiated the following system upgrades to effectively maximize the use of the collection system to minimize CSO impacts:

- System Optimization Measures ($100,000) – This project evaluated the CSO regulators and collection system to identify, design, and implement a series of small scale improvements to the CSO system that would have immediate benefits in reduction of CSO activations and volume. These projects were implemented between 2000 - 2004.
- Mill River CSO Relief Project ($7,000,000) – This project increased in-system capacity upstream of the seven CSOs that discharge to the Mill River with the goal of minimizing discharges from these CSOs to no more than one in a typical year storm series. Key elements included installation of five vortex valve throttling devices and one bending weir. Each of these components regulates flow and maximizes in-system storage prior to discharge from the CSO regulators. An update to the Mill River Project has been submitted.
- Chicopee River CSO Control ($36,000,000) – This project eliminated CSOs 043 and 044 by converting them to storm drain only discharges. It also increased capacity of the combined sewers upstream of the remaining four CSOs that discharge to the Chicopee River with the goal of minimizing discharges from these CSOs to no more than two in a typical year storm series. The project also created 100,000 gallons of CSO storage at the Indian Orchard Pump Station that captures potential CSOs at the site for storms larger than the 5-year return period and eliminated an estimated 700,000 gallons of surface flooding predicted for a typical year storm series at the pump station. The project also created 2,400 linear feet of 24-inch diameter parallel relief for the Ludlow Interceptor and increased capacity of the pump station from 34 mgd to 52.5 mgd, thereby conveying more flow to the SRWTF.
- Phase I Connecticut River CSO Control ($26,000,000) - Construction of sewer and drain improvements upstream of Regulator 007 and 049 were completed in 2012. These improvements will reduce CSO discharges at both regulators through targeted separation, increased conveyance for drain and sewer, and optimization of in system storage. The project also includes a downspout disconnection program that will reduce private property inflow from the combined sewer system.
- Washburn Street CSO Project ($8,000,000) – This project replaced the existing regulator structure and reconfigured the separated drainage system on Riverside Road so that storm flows entered the combined sewer system downstream of the regulator structure which

eliminated 5 Million Gallons (MG) of separated storm flow from the system annually. In addition, the flood doors were replaced providing the combined sewer system with enhanced protections from high river inflow.

- A comprehensive cleaning and CCTV program was completed in 2010 that included the cleaning and CCTV of greater than 100,000 feet of sewers. Approximately 50 tons of grit was removed during this cleaning program. The program was continued in 2011 (see statistics in Section 1.B.b above).
- Development of a final CSO Long Term Control Plan was completed in 2012. This included flow monitoring, cleaning and inspections of infrastructure, GIS development, asset inventory, risk modeling, hydraulic modeling and water quality modeling. CSO abatement technologies and planning level project alternatives were developed and evaluated. These activities improved hydraulic capacities and advanced the understanding of the collection system. The LTCP was later submitted as an Integrated Wastewater Plan (IWP) and was accepted by USEPA for implementation.
- Phase II Washburn Street CSO construction was underway in 2014. The Project total cost is in excess of $23,000,000. Project completion is anticipated in the summer of 2015.
- CSO 12 and 13 regulator structures were cleaned and evaluated.
- Pump station wet wells were deep cleaned.
- Targeted temporary metering programs were performed in the CT River Interceptor sewershed to support ongoing CSO control design activities and update the hydraulic model.
- Insystem storage has been built and should be on on-line as part of the Washburn CSO Project in 2015. The project design included flow control devices at multiple locations to maximize storage and flows to the treatment plant.

3. Review and Modification of Pretreatment Requirements to Ensure that CSO Impacts are Minimized

To control the sources of pollutants from industrial dischargers, the Commission administers an Industrial Pretreatment Program (IPP) as outlined in the 1997 NMC Report. This program sets regulations for sewer use and pretreatment permits, conducts inspections of IPP permitted institutions, and prepares a separate IPP Annual Report.

The IPP conducts audits, compliance monitoring inspections, and demand monitoring inspections. The purpose of the audit inspections is to collect and confirm information concerning an industrial user and its regulated processes and to evaluate the industry's compliance with the applicable pretreatment standards and regulations. The IPP is primarily concerned with identifying the wastewater pollutant pathways through the industrial user, evaluating the effectiveness of pretreatment and/or monitoring systems and verifying that residue associated with the removal of wastewater pollutants is disposed of properly.

a. EPA granted approval of local limits in an April 26, 2001 letter, the Springfield Water and Sewer Commission (SWSC) approved these local limits on June 13, 2001 and they were incorporated into the SWSC Rules and Regulations.

b. Detailed information on the SWSC's IPP is included in the IPP Annual Report for 2014 which was recently submitted.

4. Maximize Flow to the Treatment Plant

a. United Water Environmental Services, Inc. follows procedures outlined in the Springfield Water and Sewer Commission High Flow Management Plan to maximize flow to the treatment plant during storm events. The facility has taken flows of 185 MGD and greater into the treatment plant and 134 MGD into the secondary treatment

process during the year. Strategies utilized include routine flushing of the 66 inch diameter inlet channels during dry weather to control accumulation of sediments which could restrict hydraulic capacity. Procedures developed and verified in 2006 for improved high flow management continued to be used in 2014. These procedures included implementation of step feed or shutting off air to aeration zones 2 and 3 to allow for the parking of solids in the aeration basins during high flow events to reduce solids loss during periods of peak hydraulic loading in the secondary clarifiers.

b. High flow events that result in influent by-pass are verbally reported within 24 hours and a written report is filed with 5 days pursuant to NPDES requirements. .

c. Recent system upgrades that contribute to maximizing flow to the treatment plant are as follows:

- Remotely operated gate actuators were installed on inlet gates for both the primary and secondary processes in 2008. Remote operation of these gates allows operators to maximize flows through the SRWTF.

- Parallel relief to the Ludlow Interceptor and pumping system upgrades at the Indian Orchard Pump Station were completed in May 2009 increasing the capacity from 34 MGD to 52.5 MGD. This increase in pump capacity affects total volume of wastewater conveyed to the SRWTF without impacting downstream CSOs.

- One electric pump at the York Street pump station was completely reconditioned in 2008 increasing capacity for the pump station. Measured improvement showed a 25% increase in pumping capacity for that pump when compared to output prior to the reconditioning. A second York Street pump was completely reconditioned in 2011.

- Automated bar racks were installed at the York Street pump station in December 2009. This upgrade removes more materials from the wastewater stream that could become downstream obstructions to flow. A similar project was completed at the SRWTF bar screens to optimize flow at the headworks entering the plant.

- The transition to the Washburn Street Pump Station was modified with a larger inlet that connected to a new 30-inch diameter influent pipe to the pump station, upsized from 18-inches that has reduced problematic blockages and maintenance issues from the regulator structure to the wet well. The sanitary pumps were all replaced in 2012.

- New CSO regulator structures with flow control devices and installation of more than 15,000 feet of sewer and drain pipe in the CSO 049 and 007 sewer shed has contributed to minimizing CSO and maximizing flows to the SRWTF.

- Critical sewers crossing the Connecticut River were inspected in 2011 and data analyzed in 2012 to determine structural condition and assess operational and maintenance issues.

- Insystem storage has been built and should be on on-line as part of the Washburn CSO Project in 2015. The project design included flow control devices at multiple locations to maximize storage and flows to the treatment plant.

5. Elimination of CSOs During Dry Weather

In accordance with Part I.A.2.c of the NPDES Permit, the Commission reports any dry weather CSO discharges within 24 hours and provides written follow-up identifying durations, estimated volumes, and results of investigations. Efforts to eliminate dry weather overflows include:

- Twice-weekly inspections of the CSO regulators as required by the NPDES permit and outlined in the 1997 NMC Report.
- Remote CSO monitoring using level sensors and telemetry to communicate with a central SCADA system at the SRWTF to reduce impacts from CSOs by decreasing response times by maintenance staff.
- Completion of the Mill River Relief Project that increased in-system capacity upstream of the seven CSOs that discharge to the Mill River. Installation of five vortex valve throttling devices and one bending weir regulate flow, maximize in-system storage and protect against dry weather overflows.
- Completion of the Washburn Street CSO Project that replaced the existing regulator structure and facilitated the maintenance of dry weather flow to the sanitary pumping station has assisted in eliminating dry weather overflows at the regulator structure.
- Completion of the Indian Orchard Pump Station and Chicopee River CSO control project in May, 2009 which eliminated CSO Regulators 043 and 044, increased pumping capacity to the SWRTF by 18.5 mgd, and created 100,000 gallons of emergency storage at the pump station for extreme wet weather events or during a potential shut down of the pump station.
- Substantial completion of the Phase I Connecticut River CSO Control Project which included construction of sewer and drain improvements upstream of Regulator 007 and 049. These improvements will reduce CSO discharges at both regulators through targeted separation, increased conveyance for drain and sewer, and optimization of in system storage.
- Heavy grit removal and cleaning from the Connecticut River Interceptor in 2006.
- Heavy grit removal and cleaning from Connecticut River Interceptor near Orchard Street in 2009.
- Heavy grit removal and cleaning from targeted areas of Connecticut River Interceptor in 2010.
- Contracted inspection and cleaning of more than 1,000,000 linear feet of combined sewers from 2009 to 2014.

Based on data available from the remote monitoring system and inspection of the CSO overflows, during the past year there were no dry weather overflow events at CSOs.

6. Control of Solid and Floatable Materials in CSOs

The Commission has completed a system wide program for the installation of floatables control baffles. Additional cleaning that is mentioned in other sections also has eliminated solids from the collection system that may have been contributing to CSOs.

7. Pollution Prevention Programs to Reduce Contaminants in CSOs

City of Springfield and SWSC ordinances pertaining to pollution prevention programs remain as detailed in the April 1997 Nine Minimum Control Measures Final Report.

The City of Springfield conducts various programs which contribute to minimization of materials entering the CSOs including the following:

- Erosion control measures
- Street Cleaning
- Catch basin cleaning

- Household Hazardous Waste Program
- Recycling Programs

8. Public Notification to Ensure the Public Receives Adequate Notifications of CSO Occurrences and Impacts

In accordance with the NPDES Permit, the Commission maintains identification signs at CSO locations identifying each location as "Springfield Water and Sewer Commission Wet Weather Sewage Discharge Outfall (No.)." Replacement signs were designed in 2012 and were installed as part of 2014 programs.

Pursuant to the Commission's NPDES permit, #MA0103331, the Commission annually reviews and places additional signage when beneficial for public notification. Resources are included in annual budget plans for these activities.

A. Website

The Commission's website at http://www.waterandsewer.org/ includes a section entitled "What are Combined Sewer Overflows (CSOs)?" This page defines CSOs, identifies CSO locations and corresponding impacted waterways, and describes activities that have been completed as well as proposed activities to reduce or eliminate CSOs. The website also provides updates to locations of projects and maintenance activities.

B. Citizen Council Meetings

The Commission attends various monthly citizen council meetings to ensure the public is informed of the status of CSOs in Springfield and on the Connecticut River and to provide updates on CSO related projects. In addition, the Commission holds specific project related community meetings as required to solicit input from customers and the public in active project areas.

C. Annual Report

The Commission publishes an Annual Report for each fiscal year. The Annual Report contains sections that detail sewer collection systems including CSOs. Maintenance and capital improvement projects on the CSO system are discussed, and the Commission's annual budget is detailed to include capital expenditures and maintenance activities.

D. Scholastic Outreach

The SRWTF conducts a scholastic outreach program by hosting classes at the facility to explain various aspects of water and wastewater collection and treatment including the importance of pollution prevention. The World Is Our Classroom is a teaching program dedicated to raise achievement levels of city 5th grade students to meet the science and technology goals of the Massachusetts Curriculum Framework and the Comprehensive Assessment System (MCAS) tests. A decision was made to create a "classroom within a company" at the Bondi's Island Wastewater Treatment Facility. This shapes a realistic environment, where it is possible to teach about the science of water and the technology of the wastewater treatment process. In turn, it inspires student interest and equips teachers to teach in an authentic environment. This goal sharpens the skills of analysis, creative thinking, identification of components and relationships, and interpretation of data. The program blends inquiry, problem solving, real-world learning experiences, project-based learning and group decision-making. Since this program began in 2003 approximately 15,500 students have participated.

9. Monitoring to Effectively Characterize CSO Impacts and the Efficacy of CSO Controls

A. Connecticut River Water Quality Sampling and Model

In 2001 and 2002 the Commission in conjunction with The City of Holyoke, the City of Chicopee, and the Pioneer Valley Planning Commission developed and performed a Connecticut River Water Quality Sampling Program that gathered water quality sampling data at 12 select locations in receiving waters tributary to the Connecticut River or in the river itself. The program included both dry and wet weather sampling to determine fecal coliform and E. coli bacteria counts in the Connecticut River, Chicopee River, Mill River and Westfield River. The intent of this program was to generate data that would be used initially to model and analyze baseline conditions in the receiving waters. These baseline conditions would then be used to measure the efficacy of potential control strategies for the Commission's CSOs.

Water quality modeling was performed after the sampling program and subsequent discussions with DEP and EPA. Modeling included 3-month and 1 year base line condition simulations and subsequent evaluation of the impact of Phase I CSO Improvements. The analysis and report were completed in 2005. The Springfield Water and Sewer Commission initiated a program to update the model in 2011 as part of the development of the CSO Long term Control Plan. That work was completed in 2012 and results included in the LTCP and the IWP. The Commission may advance the Water Quality Model further to support sound decision making for future CSO projects.

B. Permanent CSO Monitoring Program

This section details the review undertaken and summarizes the findings of the comparison of the 2014 Annual Rainfall and CSO Flow Meter Data Review against the 1976 typical year series currently being applied to the hydraulic model for CSO predictive analyses.

It incorporates the findings from an initial rainfall analysis of the four local rain gauges sited in the Springfield catchment and the recordings from the Bradley Airport Weather Station, during the entire calendar year 2014. The rainfall focused sections consider a breakdown of the annual rainfall recordings at all five gauges and how when applying some standard categorization they compare to the Springfield typical year, which is 1976.

Included are comparisons between the readings from the Springfield CSO overflow meters with the predicted result from when the sewer system hydraulic and hydrologic model is simulated using 2014 rainfall. Prior to undertaking these analyses the Springfield sewer model was updated to reflect recent changes in the network and the inclusion of 'as built' data. Attachment 2 of this report summarizes the analyses performed and results in a Technical Memorandum.

ATTACHMENT 1

CSO CERTIFICATION

UNITED WATER ENVIRONMENTAL SERVICES, INC.
190 M STREET EXTENSION
AGAWAM, MA 01001
TEL 413-732-6501
FAX 413-732-7071
WWW.UNITEDWATER.COM

March 19, 2015

Kathy Pedersen
Executive Director,
Springfield Water & Sewer Commission
Post Office Box 995
Springfield, MA 01101-0995

RE: NPDES MA0103331 CSO Certification Letter for 2014

Dear Ms. Pedersen;

In accordance with requirement of NPDES MA 0103331, Section 2,a, by this letter United Water Environmental Services Inc. hereby certifies that the calendar year 2014 weekly CSO inspections have been conducted, results recorded and records maintained.

Sincerely

Mickey Nowak

Mickey Nowak
Project Manager
United Water Environmental Services Inc.

cc: f/Springfield/SWSC/Correspondence

ATTACHMENT 2

TECHNICAL MEMORANDUM CSO ANALYSES

KLEINFELDER
Bright People. Right Solutions.

MWH
BUILDING A BETTER WORLD

TECHNICAL MEMORANDUM

DATE: March 2015

TO: Matthew Wilson, Matthew Travers

FROM: Nicholas Anderson

CC:

SUBJECT: **2014 Annual Rainfall and CSO Flow Meter Data Review**

1.0 INTRODUCTION

This Technical Memorandum (TM) details the review undertaken and summarizes the findings of the comparison of the 2014 Annual Rainfall and CSO Flow Meter Data Review

Specifically, the TM incorporates the findings from a rainfall analysis of the four local rain gauges sited in the Springfield catchment during the entire calendar year 2014. The rainfall focused sections of the TM consider a breakdown of the annual rainfall recordings at all four local gauges and how when applying some standard categorization they compare to the Springfield typical precipitation year, which is defined to be 1976.

The TM extends to include comparisons between the readings from the Springfield CSO overflow meters with the predicted result from when the sewer system hydraulic and hydrologic model is simulated using 2014 rainfall. Prior to undertaking these analyses the Springfield sewer model was updated to reflect recent changes in the network and the inclusion of 'as built' data.

2.0 HYDRAULIC MODEL UPDATES

2.1 2014 Temporary Flow Metering Program and Targeted Model Recalibration

2.1.1 Approach

In the summer of 2014 following a review of the hydraulic model, a temporary flow meter and rainfall monitoring program was undertaken to achieve the following objectives:

- An updated understanding of system hydraulics after the substantial collection system cleaning and assessment activities undertaken since the last system-wide temporary metering program was undertaken (2009-2010);
- More and better spatial representation of rainfall across the sewershed to support model inputs and hydraulic analysis; and
- Validate the hydraulic model in key locations where some differences between previous meter observations and model predictions have been noted in previous annual rainfall and CSO analyses.

The temporary metering program took place between 5/14/2014 and 8/26/2014, which covered a total of fifteen weeks. In total, 28 temporary flow meters and 12 rain gauges where installed across the Springfield catchment. The flow meter and rain gauge locations are shown in Figures 2-1 and 2-2.

Figure 2-1 Location Plan of the Temporary Flow Metering Program

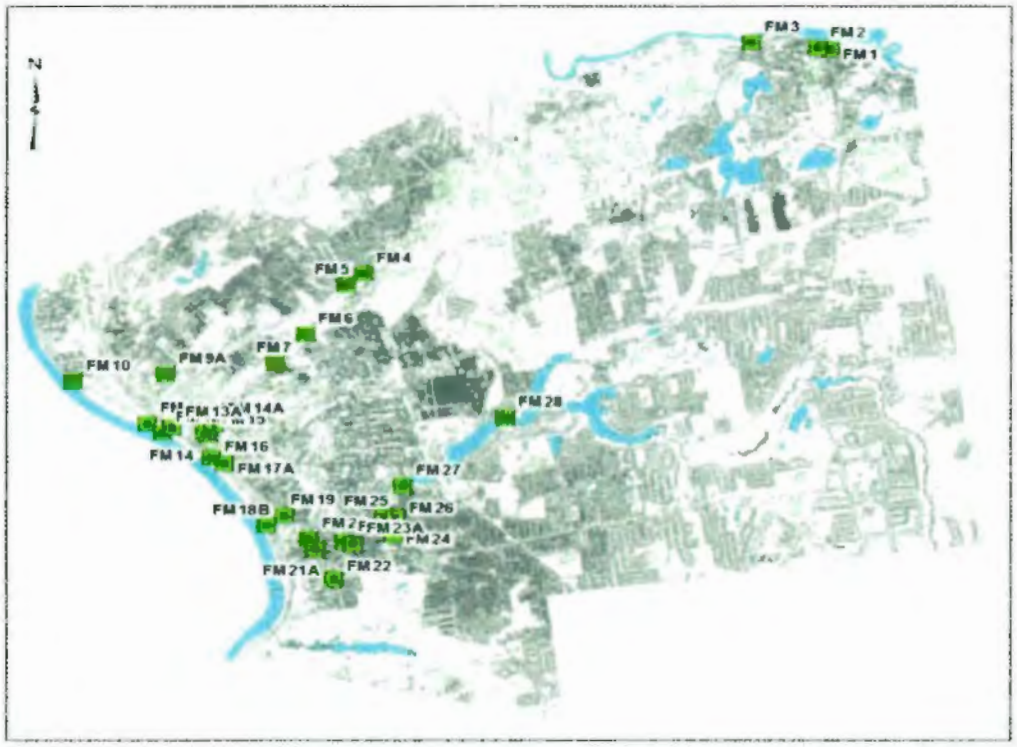
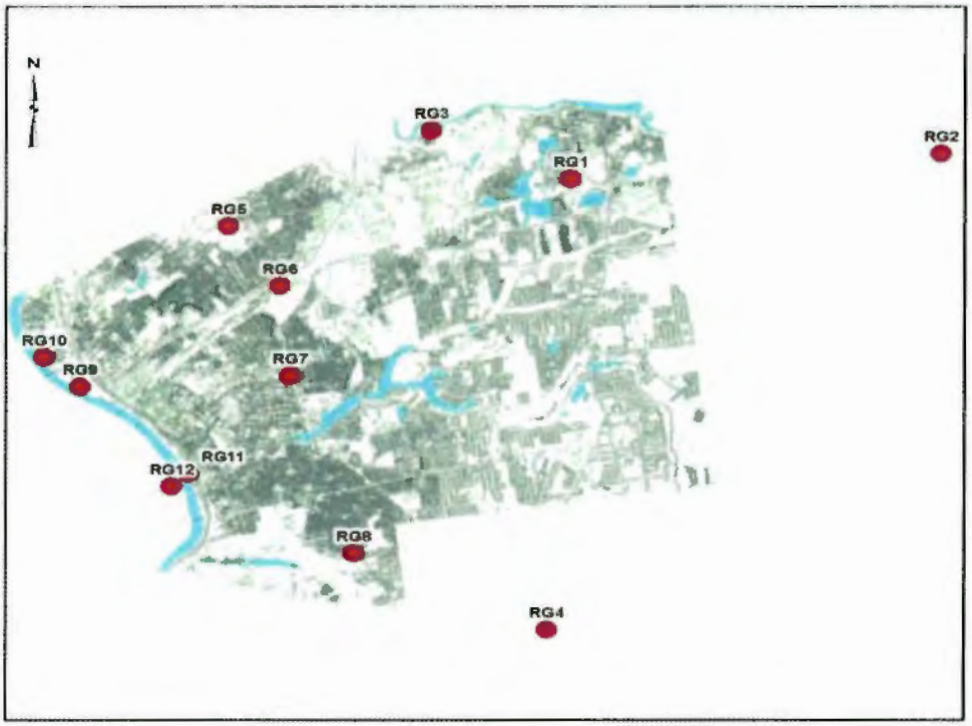
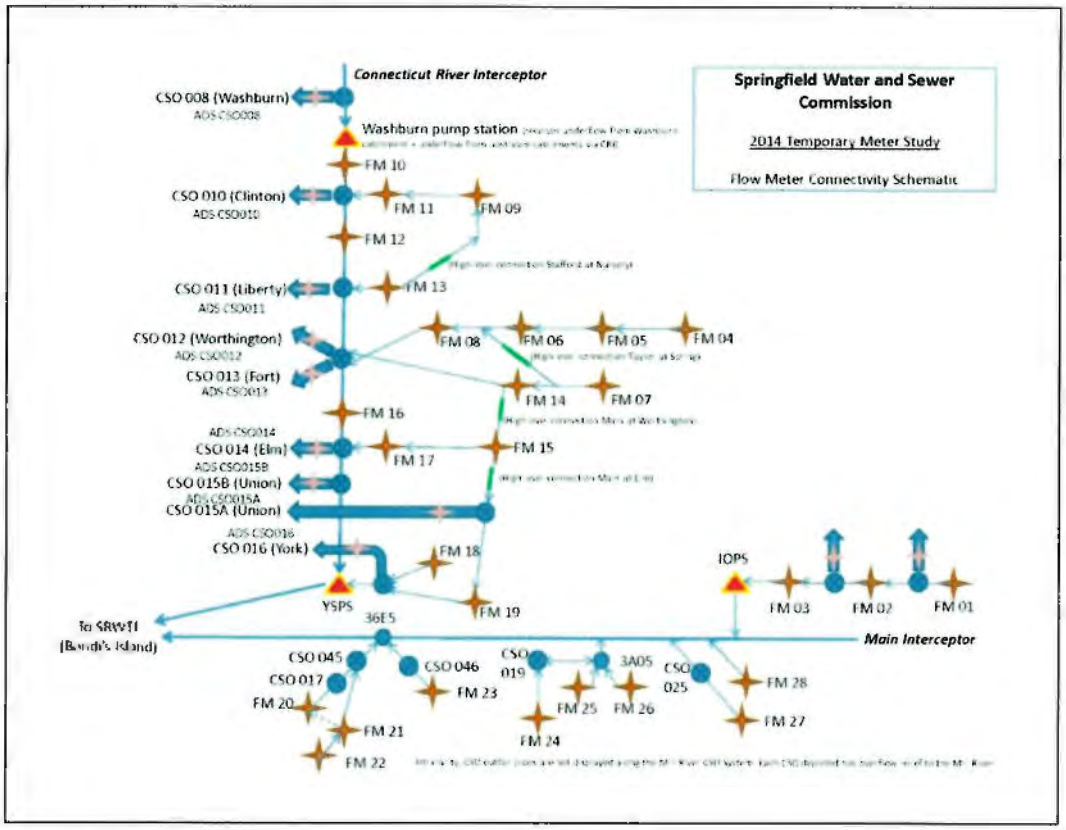


Figure 2-2 Location Plan of the Temporary Rain Gauge Program



To aid understanding as to the locations relative the catchment CSOs and main trunk sewer Figure 2-3 shows a schematic of the flow metering locations relative to the key hydraulic assets.

Figure 2-3 Schematic Plan of the Temporary Flow Metering Program



2.1.2 Results from the flow metering program

To complete the calibration checks, the rainfall hyetographs created from returned data for all twelve gauges were reviewed to identify three storms where the total depth of rainfall and the peak intensities were deemed sufficient to warrant classification in a rainfall event. Table 2-1 contains the summary of those events which met the criteria.

Table 2-1 Summary of Rainfall Characteristics (5 minute reporting increments)

Date	Start Time	Intensity (in/hr)	Duration (Minutes)	Total Volume (in)
13-July	19:10	0.41	390	0.68
27-July	8:45	0.19	270	0.41
13-August	3:25	1.48	1425	2.99

Overall the data returned from the flow metering was of a good standard and at all 28 meter locations allowing comparison between observed and predicted flow, depth and velocity data to be made.

To address the objectives of the recalibration exercise, the updates to the model can be classified into two categories:

- Localized hydraulic updates; and
- Hydrologic revisions.

The localized hydraulic updates involved the reviewing of the flow in the vicinity of the flow meters. Since the flow meters were sited at locations on the network where the volume balance and or flow rates were previously considered to warrant further investigation, these alterations include the reappraisal of pipe diameters, roughness values, gradient and the transitional headlosses between sewer lengths and manholes. These reviews took particular note of the Connecticut River Interceptor (CRI) and Mill River CSO System (MRS) trunk sewers for the interaction between the sewer velocities and the CSOs.

The hydrologic revisions encompassed the review and updating of the land use and runoff parameters assigned to model subcatchments across the City. The effort here was in reviewing exiting load points to ensure flows were correctly allocated to sewer lengths and the updating of the impervious and pervious area allocated. Overall this was the larger of the two tasks as particularly in the MRS where additional detail was added to the existing model network requiring re-delineation of the subcatchments.

2.1.3 Conclusions

Overall the velocity, depth, and flow data meters correlated well to the rain events; the observed data was reviewed for overall continuity and any temporal variations associated with the rainfall events. Industry benchmark calibration standards taken from the Chartered Institution of Water and Environmental Management (CIWEM) Urban Drainage Group Code of Practice for the 'Hydraulic Modeling of Sewer Systems' applied to the Springfield model indicate that peak flow variations should be within +25% and -15%, and total volume variations should be within +20% and -10%. Although not every location fell within these limits, these discrepancies were confined to outlying locations where the meters were installed to confirm system connectivity and wet weather response. The meters located on major sewers feeding both the MRS and CRI were regarded as returning good correlations.

Overall the model updates and the levels of calibration achieved are considered to have improved confidence in the model's ability to predict catchment wide CSO overflows.

Despite the overall improvement in model confidence there remain some localized discrepancies where external influences hindered the calibration exercise. Specifically these meters were located on the CRI. For these meters the first hurdle was the difficulty in monitoring a trunk sewer that is frequently surcharged, but also the transient nature of the sediment conditions that have a direct influence on the quality of the calibration. For the CRI the overall volume balance was acceptable, however, localized depth and velocity comparisons were variable. These challenges coupled with the interaction with York Street Pump Station (YSPS) at the downstream end of the trunk sewer introduce elements of divergence in the calibration fits. Best estimations were made to align the fits but to avoid force fitting, conditions both at YSPS and within the CRI were left as indicative as intricate hydraulic interactions as described here can have almost endless combinations. What this means is that using a single model with static sediment conditions for annual simulations will produce variable results when observed and simulated overflows are compared; any differences that are not identified during individual calibration events can be magnified aggregated together for annual reporting.

2.2 Washburn St CSO Control Project

The Washburn CSO Control Project (CSO008 catchment) was ongoing during calendar year 2014. The CSO 008 regulator has been relocated and renamed as CSO008A. Permanent flow meter equipment was installed in late 2014 but no data is available for this analysis. Data from this meter will be included with subsequent analyses.

3.0 DATA COLLECTION AND QA/QC

Rainfall data was collected from the four local ADS-maintained rain gauges located within Springfield. The local rain gauges are positioned at the following locations in Springfield and as shown in Figure 3-1 below:

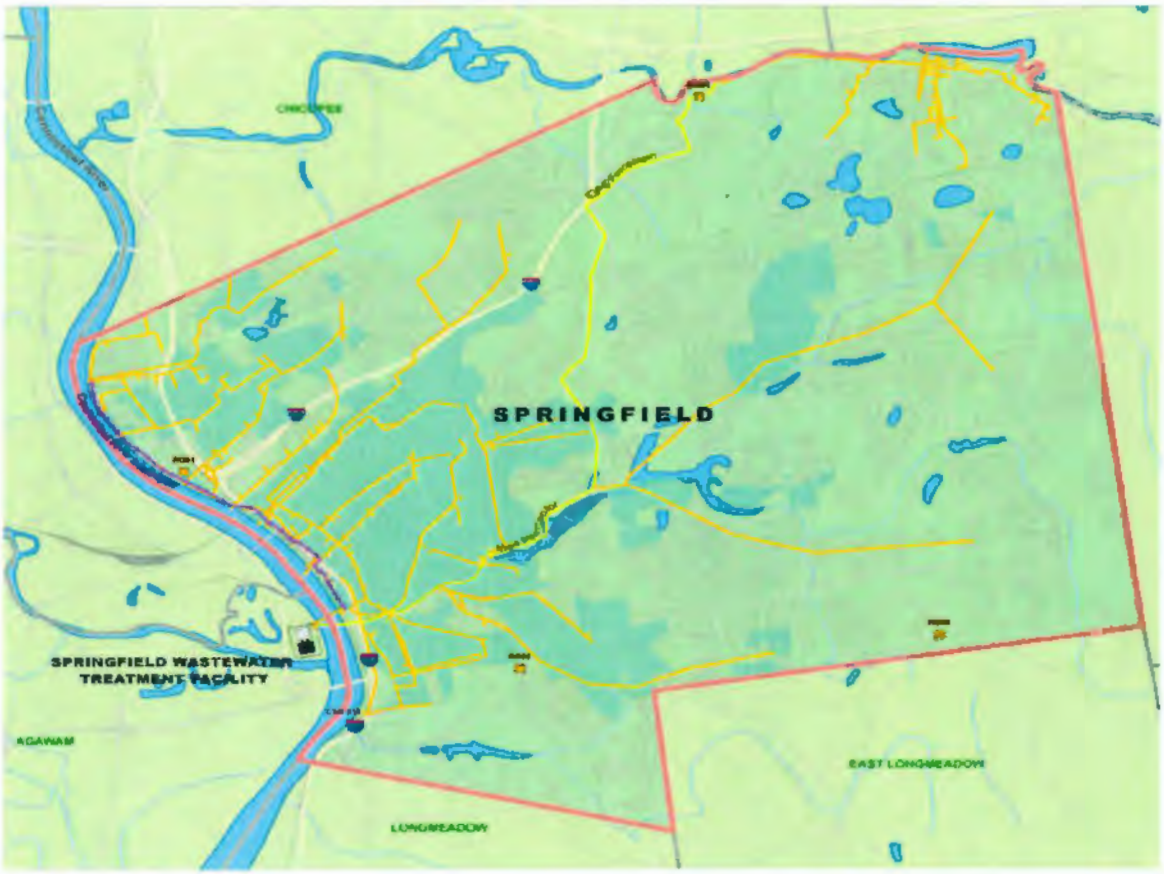
3.1 Rainfall Data Collection and QA/QC

3.1.1 Rain Gauge locations

Rainfall data was collected from the four local ADS-maintained rain gauges located within Springfield. The local rain gauges are positioned at the following locations in Springfield and as shown in Figure 3-1 below:

- RG01, stationed along the Connecticut River in the northwest portion of Springfield;
- RG02, stationed in the southwest portion of Springfield;
- RG03, stationed in the southeast portion of Springfield; and
- RG04, stationed in the northeast portion of Springfield.

Figure 3-1: Permanent Rain Gauge Locations in Springfield, MA



3.1.2 2014 Rainfall Data Categorization

The first stage to reviewing the rainfall data recorded was to compare the recorded rainfall depth at each of the four rain gauge sites. Spatial and temporal differences are an important consideration in understanding the potential impacts that wet weather has on CSO performance. The gauges are spread throughout Springfield and will therefore return varying total depth when compared across an entire year.

To better understand the nature of the rainfall that was recorded in Springfield during 2014, the annual hyetographs for the four local rain gauges were disaggregated into both depth and intensity ranges. The ranges are designed to offer a breakdown as to the frequency of the individual rainfall events that comprise the annual hyetograph. The results of the breakdown of the annual rainfall total depth are contained in Table 3-1.

Table 3-1 2014 Rainfall Disaggregation by Total Depth

2014								
Data Set	Total Rainfall (inches)	Total No. of Storms	Number of Storms by Total Precipitation (inches)					
			0.01 to 0.13	0.14 to 0.25	0.26 to 0.50	0.51 to 1.0	1.01 to 2.0	> 2.0
ADS RG01	48.65	80	29	8	12	10	17	4
ADS RG02	38.4	75	26	14	10	13	8	4
ADS RG03	45.4	81	30	11	9	15	12	4
ADS RG04	45.9	78	28	9	10	14	13	4

What is noticeable when considering the depth of rainfall within Springfield is a moderately good correlation amongst the total depth, total number of storms, and rainfall depth categorization across all four rain gauges. However, the difference in the total depth of rainfall between RG02, the lowest, and RG01, the highest, is 10.25 inches; a variance of 27%. When using rainfall for model simulation purposes this type if variance can lead to variability in predicted CSO results.

Looking deeper into the breakdown of the annual series, there is the greatest percentage of mismatches in rainfall recordings in the 0.14 to 0.25 category and in the 1.01 to 2.0-in category. There is generally good consistency exhibited in the lowest range, 0.01 to 0.13-in; however; generally this range of rainfall events do not cause CSOs to activate and therefore does not have a strong influence on the likelihood of correlation for CSO behaviour. Where there is likely to be the greatest variance when comparing model predictions with recorded data for CSO behaviour is in the 0.14 to 0.25 inches range; these rainfall events generate storms that are either just under or over the CSOs activation thresholds (for the CRI system), and when considering long periods of data can skew results. In this instance, the variability between RG01 (8 events), and RG02 (14 events) is a variance that could introduce lower confidence to predictions.

To obtain a more complete picture of the 2014 rainfall recording, the data was considered from a peak intensity perspective to better understand the rainfall characteristics, as this is an important factor in determining the extents to which CSO activate. Details of rainfall distributions broken down by intensity are summarized in Table 3-2.

Table 3-2 2014 Rainfall Disaggregation by Intensity

2014							
Data Set	Total Rainfall (inches)	Total No. of Storms	Number of Storms by Peak Intensity (in/hr.)				
			0.01 to 0.10	0.10 to 0.25	0.25 to 0.50	0.50 to 1.0	> 1.0
ADS RG01	48.65	80	32	26	17	1	4
ADS RG02	38.4	75	38	22	10	4	1
ADS RG03	45.4	81	41	24	9	6	1
ADS RG04	45.9	78	39	20	14	3	2

Many of the details described for the total depth are applicable for the intensity and the ratios between the gauges are similar. What is noticeable from the returned data is moderately good correlation amongst the gauges in the lower two ranges, 0.01 to 0.1 in/hr and 0.1 to 0.25 in/hr which would suggest that reasonably good CSO predictive behaviour for smaller storms could be expected as a result. The more severe rainfall data is less aligned across the rain gauges, which may offer lesser correlation during more significant rainfall; however around the range when CSOs may or may not activate (in the CRI system) there are similarities.

It is evident that the use of four discrete gauges across a city the size of Springfield introduces noticeable variability across the collected rainfall totals., Discounting the inevitable occasional gauge failure, the spatial and temporal effects of rainfall cause localized storms to occur which are not always captured at all gauges, resulting in mismatched depth totals. If better correlation is required, including the ability to capture rainfall data for modeling CSO performance, a more densely populated rain gauge network should be considered.

More rain gauges however will only reduce the variance and not eliminate it. The irregular effects of rainfall passing across the city differ for every storm and this unpredictability is

not reflected in the model. Since the model simulations depend on a depth of rainfall at a particular gauge to be distributed across an entire CSO catchment, the variability observed in reality is missed; the result is a fluctuating comparison between actual CSO overflows and model predicted overflows.

3.1.3 Comparison with the 1976 Typical Year

One of the objectives of this TM was to compare the 2014 rainfall with the 1976 typical year. Table 3-3 shows the total depth comparison and rainfall event range breakdown between the 2014 and 1976 series.

Table 3-3 1976 Rainfall Disaggregation by Total Depth

1976 v 2014								
Data Set	Total Rainfall (inches)	Total No. of Storms	Number of Storms by Total Precipitation (inches)					
			0.01 to 0.13	0.14 to 0.25	0.26 to 0.50	0.51 to 1.0	1.01 to 2.0	> 2.0
Typical year	42.2	82	28	15	11	14	11	3
ADS RG01	48.65	80	29	8	12	10	17	4
ADS RG02	38.4	75	26	14	10	13	8	4
ADS RG03	45.4	81	30	11	9	15	12	4
ADS RG04	45.9	78	28	9	10	14	13	4

When comparing the 2014 gauges with the 1976 series, some traits immediately emerge. Firstly, 2014 (median depth = 46.7-in) was a wetter year in terms of total rainfall depth compared with 1976. Secondly, there is good correlation between the median 2014 storm count (79 storms) versus 1976. Furthermore, it is evident there is good correlation at the lowest range of individual storm rainfall depth, 0.01 to 0.13-in. However as mentioned in the previous section generally this range of rainfall events do not cause CSOs to activate (in the CRI system) and therefore does not have a strong influence on the likelihood of correlation for CSO behaviour between the 2014 CSO behaviour relative to 1976. What is also noticeable from this gauge data is that discounting the low level rainfall, there is an underrepresentation of the three depth ranges between 0.14 and 1.0 inches of rainfall (median 2014 data) versus the 1976 data in the same ranges, while 2014 represents an over-representation of the more severe rainfall (greater than 1.0 inch) versus 1976.

Overall, 2014 was a wetter year than the typical year, and despite the correlation in number of storms, the shift in event distribution towards the higher rainfall ranges and away from the low level events suggests that CSO performance comparisons between 2014 and 1976 will be different as the rainfall patterns experienced are different.

For completeness the comparison between the 2014 and 1976 rainfall series have also been analyzed for peak intensity as shown in Table 3-4.

Table 3-4 1976 Rainfall Disaggregation by Intensity

1976 v 2014							
Data Set	Total Rainfall (inches)	Total No. of storms	Number of Storms by Peak Intensity (in/hr.)				
			0.01 to 0.10	0.10 to 0.25	0.25 to 0.50	0.50 to 1.0	> 1.0
Typical year	42.2	82	48	17	12	4	1
ADS RG01	48.65	80	32	26	17	1	4

1976 v 2014							
Data Set	Total Rainfall (inches)	Total No. of storms	Number of Storms by Peak Intensity (in/hr.)				
			0.01 to 0.10	0.10 to 0.25	0.25 to 0.50	0.50 to 1.0	> 1.0
ADS RG02	38.4	75	38	22	10	4	1
ADS RG03	45.4	81	41	24	9	6	1
ADS RG04	45.9	78	39	20	14	3	2

Similar to the depth comparison, the peak intensities for 2014 shift toward higher magnitudes when compared to the 1976 series. The median 2014 rainfall data in the lowest intensity range (0.01 to 0.1 in/hr) is dramatically lower than in 1976. However, as stated previously, this range of rainfall events generally do not cause CSOs to activate, so this fact alone would not be expected to influence a comparison of 2014 CSO activations versus 1976. However it is immediately evident that with the next category of storm intensity (0.1 to 0.25 in/hr), the median 2014 storms are dramatically overrepresented versus 1976.In the remaining categories of higher magnitude intensity, the median 2014 data is generally consistent versus 1976.

3.1.4 2014 Rainfall Analysis Conclusions

Considering the combination of the depth and intensity comparisons, these findings indicate that the 2014 individual event depths are clustered in the higher ranges and the intensities are similarly concentrated in the upper ranges of storms likely to produce CSOs. It is likely that this means that there will be more events that are on the cusp of CSO activations; CSOs by their intention in Springfield respond to shorter more intense rainfall and if the intensities are lower a larger accumulation of rainfall and the subsequent runoff is required for a wet weather response capable of activating a CSO regulator.

3.2 Wet Weather Reporting Enhancements

In order to better understand and characterize the behaviour of the collection system during wet weather conditions, SWSC has requested an enhanced data set from its flow monitoring subcontractor (ADS Environmental) and from its wastewater treatment plant operator (United Water). In addition to previously reporting data that included daily total rainfall from one nearby rain gauge and daily total CSO volume discharge (verified by float switch activity), supplemental data is being reported as follows:

- Daily total rainfall from all four rain gauges maintained (by United ADS);
- Daily total rainfall from a rain gauge at the SRWTF (by United Water);
- Daily average and daily peak influent flowrates to the SRWTF (by United Water); and
- Daily minimum and maximum temperatures recorded at the SRWTF (by United Water).

The enhanced dataset now includes all of the above parameters in a consolidated presentation to better enable characterization of the collection system and better understand the causes of measured CSO behaviour at times when precipitation records would not normally suggest CSOs likely to occur. For example, the recordings of CSO volume at an individual or group of CSO regulators on a winter day without recorded precipitation, together with observations of elevated SRWTF influent flows and above-freezing temperatures, would suggest that snowmelt is causing CSO discharges. While

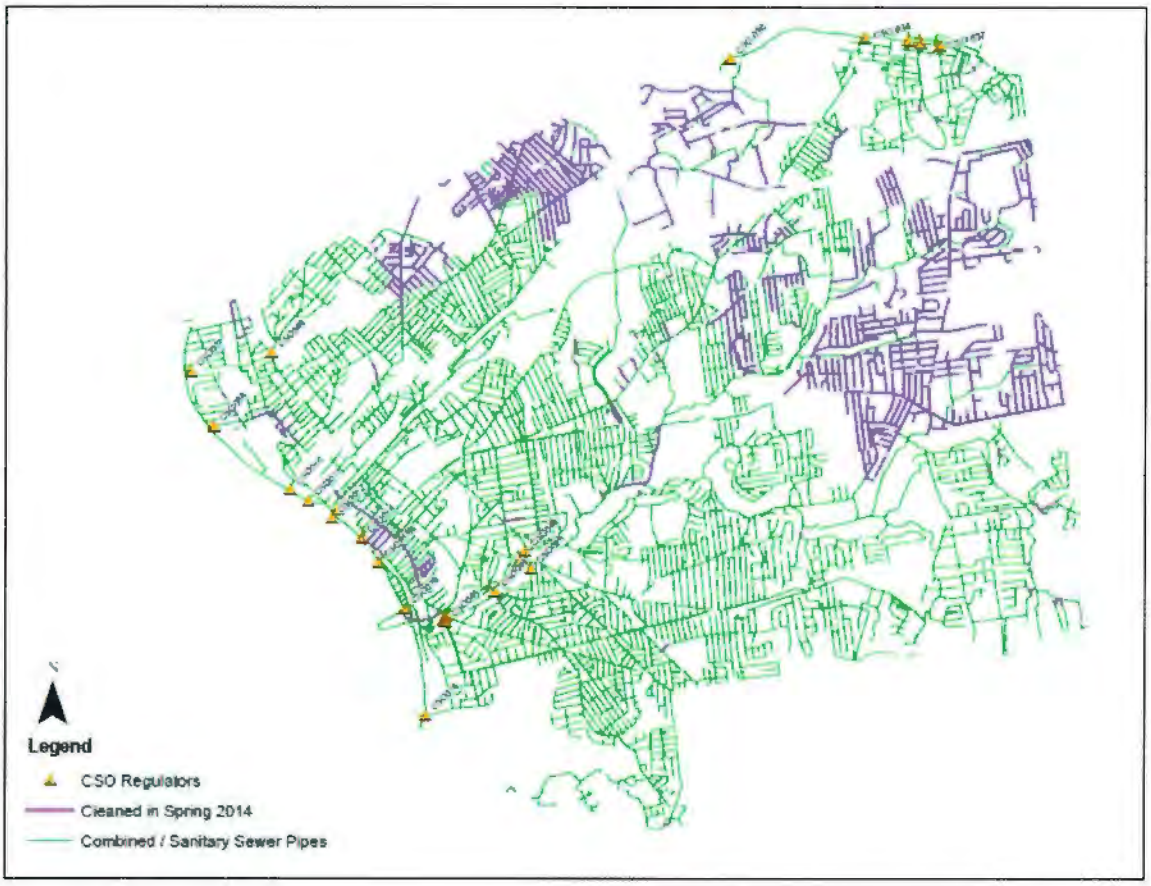
this does not waive a CSO occurrence it is important to note when evaluating predictive hydraulic model performance.

This enhanced set of measured data forms the basis of comparison with model predictions described in the following section.

3.3 Annual Sewer Maintenance

The Commission undertakes an extensive annual sewer cleaning program. In 2014, 460,000 Lf of sewer was cleaned as part of ongoing maintenance practice. Figure 3-2 shows the locations and extents of the sewers cleaned.

Figure 3-2 Annual Sewer Cleaning Program Extents



Sediment build up in sewers will result in changeable flow conditions, reduced capacity, and localized changes in both velocity and depth will be reflected by flow meters. When the model is simulated for annual reporting, the original conditions that remain unaltered in the model will vary in the sewer system. The effects of a cleaning program similarly results in further systemic changes that are not included in the model. This is a recognized limitation and unless there is major blockage removal which would be included in the model, the variability between recorded and predicted CSO overflows is accepted.

4.0 HYDRAULIC MODEL PREDICTIONS VS ADS REGULATOR FLOW METER MEASUREMENTS

Continuing on from the previous sections where the rainfall recorded during 2014 was reviewed, this section of the TM considers the effect of simulating the sewer network model with the 2014 rainfall and comparing the model performance against the CSO regulator meter recordings. The comparisons were made for both the number of annual activations and the total overflow volumes. All CSO regulators within Springfield were included in the analysis and for ease of understanding were classified in the Connecticut River, Mill River and Chicopee Systems.

4.1 Hydraulic Model Configuration

The hydraulic sewer model used for the 2014 analyses was the previous year's model with the updates described in Section 2.0 herein.

4.2 CSO Regulator Results Comparisons

4.2.1 Monthly Tabular Comparisons – Meter Recordings vs Model Predictions

The results summarized in Table 4-1 below show the comparisons between the measurements and the hydraulic model predictions of CSO behaviour. An antecedent dry period of 24 hours shall qualify whether a precipitation measurement is considered a discrete rainfall event. Using the enhanced wet weather reporting dataset, raw measurements have been screened with the application of the filters below. These filters bring the reporting of the CSO measurements in alignment with the model's ability to predict CSO behaviour

- Measured CSO discharges of less than 5,000 gallons have been excluded from the observed dataset;
- Measured CSO discharges from regulators nearby to temporarily malfunctioning rain gauges have been excluded from the observed dataset; and
- Measured CSO discharges on days when functional float switches did not substantiate an overflow have been excluded from the observed dataset.

Table 4-1 CRI Catchment Meter Recording vs Model Prediction Results

CSOs	ADS Spill Report		Model Results	
	Total Spills	*Volume (MG)*	*Total Spills*	*Volume (MG)*
Connecticut River System				
CSO 007	2	0.94	5	1.47
CSO 008*	0	0	0	0
CSO 010	44	77.53	59	145.38
CSO 011**	4	0.47	12	3.11
CSO 012	46	137.48	37	51.15
CSO 013	17	18.29	12	10.11
CSO 014	28	10.17	51	44.8
CSO 015A	23	9.78	45	28.63
CSO 015B	8	1.57	16	2.2
CSO 016	37	74.45	42	56.17

CSOs	ADS Spill Report		Model Results	
	Total Spills	*Volume (MG)*	*Total Spills*	*Volume (MG)*
CSO 018	12	0.72	4	0.09
CSO 049	17	2.12	23	1.94
Total	**238**	**333.52**	**306**	**345.05**

**The Washburn CSO Control Project was ongoing during 2014. Permanent flow monitoring equipment was not available in 2014 but is now in place and will be evaluated in subsequent comparisons.*
*** Spill count and volume reported by ADS are using a weir equation. The meter is located on the upstream side of the weir so this data is not a direct measurement of overflow occurrences.*

The comparison between the model prediction and the observed data for the CRI catchment follow the trends described in Section 2. The comparison between the aggregated spill count and annual volume is good, indicating the overall volume balance between rainfall falling on the catchment, the generation of runoff and the flows within the sewer network, are regarded as good.

The transient nature of sediment appears to have had an influence on hydraulically interrelated CSOs performance. .The model was simulated with the CRI in the same condition as in the comparison of CY2013 data. In this instance the anomalies between the individual CSOs determined to be the result of the internal sewer conditions and hydraulics of the interceptor sewer and the regulator structures. During this analysis by changing the internal conditions (sediment depth and associated pipe roughness) it was possible to alter the distribution of the overflows between regulators. This is especially pertinent to CSOs 010, 012, 013 and 014, which readily interchange based on the simulation set up. For the purposes of this analysis Table 4-2 compares the results across these four CSOs collectively we see that there is very good correlation especially for total overflow volume, indicating that the model is a good reflection of the CRI overall.

Table 4-2 CSOs 10, 12, 13 and 14 Results

CSOs	ADS Spill Report		Model Results	
	Total Spills	*Volume (MG)*	*Total Spills*	*Volume (MG)*
Connecticut River System				
CSO 010	44	77.53	59	145.38
CSO 012	46	137.48	37	51.15
CSO 013	17	18.29	12	10.11
CSO 014	28	10.17	51	44.8
Total	**135**	**243.47**	**159**	**251.44**

The value of the 2014 flow metering program was in the increased confidence associated with the incoming flow to the CRI, which is reflected in the overall correlation between the updated model and the overflow observations.

Table 4-3 Mill River CSO (MRS) Catchment Meter Recording vs Model Prediction Results

CSOs	ADS Spill Report		Model Results	
	Total Spills	*Volume (MG)*	*Total Spills*	*Volume (MG)*
Mill River System				
CSO 017	12	2.1	6	0.8

CSOs	ADS Spill Report		Model Results	
	Total Spills	*Volume (MG)*	*Total Spills*	*Volume (MG)*
CSO 019**	5	2.0	1	0.01
CSO 024	2	0.3	1	0.01
CSO 025	12	1.4	4	0.1
CSO 045	9	2.0	9	0.4
CSO 046	11	2.3	9	0.4
CSO 048	10	1.3	3	0.3
Total	**61**	**11.3**	**33**	**2.0**

*** Spill count and volume reported by ADS are using a weir equation. The meter is located on the upstream side of the weir so this data is not a direct measurement of overflow occurrences*

An analysis of the overflow measurements versus the model predictions indicate that in many cases the size of the overflows at the regulators in the MRS are close to the model's lower threshold for identifying spills and hence the difference in overflow activations. In one particular case (CSO 019), the application of a weir equation in lieu of a meter directly measuring overflow on the dry side of the weir creates difficulty in comparing model performance and observed data.

When aggregated across the entire calendar year these observations show a mismatch versus the predictions. However, the individual discharge volumes are generally very small, and regarded as being below the model's threshold for accurate reporting, particularly in the MRS which is a more skeletal model network than the CRI.

Table 4-3 Chicopee River CSO Catchment Meter Recording vs Model Prediction Results

CSOs	ADS Spill Report		Model Results	
	Total Spills	*Volume (MG)*	*Total Spills*	*Volume (MG)*
Chicopee System				
CSO 034	11	1.0	4	0.47
CSO 035	10	2.5	4	1.18
CSO 036	15	3.2	5	2.37
CSO 037	5	0.6	0	0
Total	**41**	**7.3**	**13**	**4.02**

Many of the issues described in the MRS results summary are equally applicable for the Chicopee system. The small upstream catchments for the CSOs and the reported large number of small spills do look a stark contrast to the model results when aggregated over the entire year.

As a further complication during the calibration in this area it was noted that the influence of internal condition changes has a disproportionate impact on the model predictions, particularly depth. The model arrangement for this analysis was based on the available substantiated data; no attempt at force fitting was made.

5.0 CONCLUSIONS

Calendar year 2014 saw the Commission invest in a temporary flow metering program to update the understanding of system hydraulics after a multi-year cleaning and assessment effort, obtain more and better spatial rain gauge representation across the sewershed, and validate the hydraulic model predictive performance in key locations

where some differences have been observed relative to measurements. The program produced successful results indicating good correlation between peak flow and volume comparisons in the collection system; however, some localized discrepancies along the CRI remain. These discrepancies may in part be due to uncertainty of the influence of the transient sediment on the operational performance of the York Street Pump Station in terms of its effect on flow levels in the sewer, which in turn influences model accuracy and CSO predictive performance. Further external boundary conditions linked to high river levels and the influence of the sewer inspection and cleaning program have all served to introduce mismatches between observed CSO and model overflow comparisons.

An analysis of the rainfall patterns measured in 2014 indicated moderately good correlation amongst the total depth, total number of storms, and rainfall depth categorization across all four rain gauges. There was however some inconsistencies in rainfall recordings in the ranges of total depths that tend to cause CSO activity. Analysis of rainfall intensities in 2014 showed similar trends as for depth, with somewhat less consistency in the higher intensity ranges. Rainfall characteristics from 2014 were compared with the typical year (1976). Overall, 2014 was a wetter year than 1976, and despite a good correlation in number of storms between the two years, there is a greater cluster of rainfall events in the higher ranges of both storm depth (in) and peak intensity (in/hr) compared with the lower ranges. This suggests that CSO performance comparisons between 2014 and 1976 will be different as the rainfall patterns experienced are different. It is likely that this means that there will be more events that are on the cusp of CSO activations.

The Commission has enhanced its pool of measured data to better enable characterization of the collection system and better understand the causes of measured CSO behaviour. This enhanced data set will form the foundation of its collection system reporting program moving forward and will inform further refinement of the hydraulic model.

Comparisons between 2014 CSO measurements and model predictions were undertaken. In the CRI system, the comparison between the aggregated spill count and annual volume is good, indicating the overall volume balance between rainfall falling on the catchment, and the generation of runoff and the flows within the sewer network, are regarded as good. The anomalies between the individual CSO comparisons are the results of the operations and hydraulics of the interceptor sewer and the regulator structures. In the MRS, an analysis of the overflow measurements versus the model predictions indicate that in many cases the size of the overflows at the regulators in the MRS are close to the model's lower threshold for identifying spills and hence the difference in overflow activations. Furthermore many model predictions indicate a breach of the CSO crest but since the resultant volume is below the reportable threshold the result was discounted; a feature also true for the Chicopee system. However the improvement in the Chicopee system prediction is better than previously and demonstrates the positive influence of the temporary metering program.

6.0 RECOMMENDATIONS

- Possible extension of the permanent rain gauge coverage;
- Continued permanent flow metering program at CSO outfalls;
- Continued periodic system-wide temporary monitoring to supplement permanent metering program for calibration updates and model enhancement and accuracy as it relates to overall model predictive performance; and

- Continued cleaning and assessment program to continue improve collection system performance. Tie maintenance locations to collection system mapping to add context to variations in model predictions versus measurements.

ATTACHMENT 3

INFILTRATION & INFLOW REPORTS

SPRINGFIELD WATER
AND SEWER COMMISSION

Post Office Box 995
Springfield, Massachusetts
01101-0995

413 787-6256
FAX 413 787-6269

March 31, 2015

U.S. Environmental Protection Agency
Discharge Monitoring Reports (OES4-SMR)
5 Post Office Square-Suite 100
Boston, Massachusetts 02109-3912

Re: NPDES Permit MA0101613 Requirements - Inflow and Infiltration (I/I)

To Whom It May Concern:

The Springfield Water and Sewer Commission (Commission) maintains and operates over 500 miles of sewers within its jurisdiction. Ongoing maintenance programs include video inspection, jetting, rodding, vacuuming, and other methods of cleaning and inspecting sanitary and combined sewers and manholes. As Inflow/Infiltration problems are found during the course of operations and maintenance activities the appropriate actions are taken.

United Water L.L.C. in their role as the contract operator of the treatment facility, the Combined Sewer Overflows, and Flood Control Systems has conducted the annual inspections of the flood control/inflow structures on the combined sewer system as required by NPDES Permit MA0103331. United Water L.L.C. also routinely monitors flow data recorded at the Springfield Regional Wastewater Treatment Plant and contributing communities and any irregular and or increased flows are investigated.

The Commission has continued to advance its sewer assessment program as part of the CMOM component of our USEPA Administrative Consent Order (Docket No. 08-037) and as part of our CSO program. To that effect, the Commission has continued its comprehensive condition assessment of the collection system which includes cleaning, inspection, I/I evaluation, risk and consequence of failure evaluations, and flow metering programs. Findings are being appropriately addressed as short term and long term repair/replacement projects.

We continue to advance these programs to satisfy our NPDES, CMOM, and CSO requirements. Additional detailed information can be found in the 2014 CMOM and CSO reports required by NPDES Permit MA0103331.

If there are any questions regarding this or any other matter please contact this office at your earliest convenience.

Respectfully,

Springfield Water and Sewer Commission

By: Joshua D. Schimmel
Operations Director - Wastewater

Cc: Katherine J. Pedersen, Springfield Water and Sewer Commission
MADEP-Western Regional Office

TOWN OF
East Longmeadow
MASSACHUSETTS 01028-2457

Board of Public Works
Thomas G. Wilson, Jr., Chairman
John F. Maybury
Daniel S. Burack

Public Works Superintendent
Robert Peirent, P.E.
robert.peirent@eastlongmeadowma.gov
Telephone (413) 525-5400
Fax (413) 525-5413

February 18, 2015

Department of Environmental Protection
Western Regional Office
436 Dwight Street
Springfield, MA 01103
Attention: Paul Nietupski, Section Chief
Wastewater Management Program

RE: Wastewater Collection System Reporting

cc: Ryan Wingerter, Springfield Water and Sewer Commission

Dear Mr. Nietupski,

This letter responds to the requirements of 314 CMR 12.07 (6) for wastewater collection system operators to report annually on new sewer connections and infiltration and inflow (I & I) work conducted on their system each year. This letter reports this information for calendar year 2014. This letter also serves as a response to a request by the Springfield Water and Sewer Commission for documentation of our I & I efforts during 2014 by letter to us dated January 22, 2015.

During 2014, there were thirty seven (37) new single family home sewer connections made to East Longmeadow's collection system. Using a value of 165 gallons per single family home, based on historical residential billing, we've estimated an annual sewer flow of 6,105 gallons per day from these new residential connections. In addition Bay Path University recently completed construction of a new classroom building on the corner of Denslow and Shaker Roads. The building will serve an estimated 274 students. Using a design flow of 15 gallons per student per day we would conservatively estimate a sewer flow of 4,110 gallons per day. Lastly a new self-storage facility with a single bathroom was constructed at 91 Industrial Drive and connected to the sewer system. We estimate 50 gallons per day of sewer flow for this single employee business. The estimated flow numbers for the classroom building and storage facility can be corrected for actual flows as water usage data is generated. Our list showing each new sewer connection inspection completed in 2014 is included herewith.

The Town continued to make progress on its Infiltration and Inflow Removal program during 2014. Phase I of the program targeted areas with infiltration rates greater than 11,000 pgp/idm and was implemented during 2013. Phase II of the I/I program targets sewers found to have infiltration rates greater than 4,000gpd/idm, but less than 11,000 gpd/idm. During the spring additional CCTV inspections were conducted on the Vineland cross-country sewer interceptor. These inspections and those previously performed in other targeted areas were incorporated into the *2014 Sewer Main and Manhole Test and Seal Project* which includes testing and sealing of 300 feet of sewer main, 40 gravity service connections, installation of 7 short liners, and sealing approximately 224 feet of vertical manholes. Bids for this work were opened in December and the work was awarded to Green Mountain Pipeline Service. Work will be completed in 2015.

Additional I&I work performed during 2014 included:

- Repair of a leaking pipe joint in a sewer near the intersection of La Salle and Anne Roads.
- Installation of a valve on the pool-area drain at Pine Knoll Recreation Area that allows for diversion of stormwater away from the sanitary sewer when the pool has been drained and is not in use.
- Repair of a leaking sewer connection from the Pine Knoll Recreation Area sewer connection to a manhole on Orchard Road.
- Identification of an abandoned sewer on North Main Street previously sealed with a concrete plug that was seen to be leaking significantly during video inspection. We will install an additional plug this winter before high spring groundwater conditions return to stop extraneous flow to the system estimated to be at least 10 gpm.
- Inspection of sewers on North Main Street, Elm Street and Mapleshade Avenue.

If you have any questions or need any additional information, please feel free to contact me.

Very truly yours,

Daniel J Murphy

Daniel Murphy, P.E.
Town Engineer

40 Records in this Report. **Return to Reports**

ID	Date Submitted	Description	Requested By Date Due	Division	Assigned To Assigned On	Location
2014-21790	12/5/2014 1:10 PM	Sewer Inspection	CSavio 12/5/2014	Sewer	Roy Esposito 12/5/2014	Street: 29 HOLLAND DRIVE Cross Street: Landmark:
2014-21660	10/28/2014 8:21 AM	Sewer Inspection	SAbad 10/28/2014	Sewer	Roy Esposito 10/28/2014	Street: 9 CAPRI DRIVE Cross Street: Landmark:
2014-21606	10/15/2014 9:23 AM	Sewer Inspection	SAbad 10/15/2014	Sewer	Roy Esposito 10/15/2014	Street: 74 LEE STREET Cross Street: Landmark:
2014-21598	10/10/2014 10:53 AM	Sewer Inspection	SAbad 10/10/2014	Sewer	Roy Esposito 10/10/2014	Street: 35 LINDEN AVENUE Cross Street: Landmark:
2014-21596	10/10/2014 8:48 AM	Sewer Inspection	SAbad 10/10/2014	Sewer	Roy Esposito 10/10/2014	Street: 29 ALLEN STREET Cross Street: Landmark
2014-21572	10/3/2014 9:23 AM	Sewer Inspection	CSavio 10/3/2014	Sewer	Roy Esposito 10/3/2014	Street: 7 AUBURN STREET Cross Street: Landmark:
2014-21528	9/25/2014 9:31 AM	Sewer Inspection	JPescetta 9/25/2014	Sewer	Roy Esposito 9/25/2014	Street: 46 LORI LANE Cross Street. Landmark:
2014-21490	9/18/2014 9:13 AM	Sewer Inspection	CSavio 9/18/2014	Sewer	Roy Esposito 9/22/2014	Street: 91 INDUSTRIAL DRIVE Cross Street. Landmark:
2014-21476	9/16/2014 8:09 AM	Sewer Inspection	SAbad 9/16/2014	Sewer	Roy Esposito 9/16/2014	Street: 21 FENWAY LANE Cross Street. Landmark:
2014-21474	9/16/2014 7:46 AM	Sewer Inspection	JPescetta	Sewer	Roy Esposito 9/15/2014	Street: 15 PLEASANT PLACE Cross Street: Landmark:
2014-21468	9/15/2014 9:34 AM	Sewer Inspection	JPescetta	Sewer	Roy Esposito 9/16/2014	Street: 16 PEACHTREE ROAD Cross Street: Landmark:
2014-21392	9/2/2014 11:04 AM	Sewer Inspection	JPescetta	Sewer	Roy Esposito 12/11/2014	Street: 91 COLONY DRIVE Cross Street: Landmark: MAIN SEWER INSPECTION
2014-21383	8/29/2014 9:53 AM	Sewer Inspection	JPescetta	Sewer	Roy Esposito 8/29/2014	Street: 46 BIRCH AVENUE Cross Street: Landmark:
2014-21374	8/28/2014 8:18 AM	Sewer Inspection	SAbad 8/28/2014	Sewer	Roy Esposito 8/28/2014	Street: 18 PEACHTREE ROAD Cross Street: Landmark:
2014-21297	8/14/2014 9:53 AM	Sewer Inspection	JPescetta 8/14/2014	Sewer	Roy Esposito 8/14/2014	Street: 76 LEE STREET Cross Street: Landmark:
2014-21230	8/1/2014 8:11 AM	Sewer Inspection	SAbad 8/1/2014	Sewer	Roy Esposito 8/4/2014	Street: 21 SOUTH BEND LANE Cross Street: Landmark:
2014-21229	7/31/2014 11:20 AM	Sewer Inspection	CSavio 7/31/2014	Sewer	Mark Langone 8/4/2014	Street: 91 COLONY DRIVE Cross Street: Landmark:
2014-21224	7/30/2014 11:24 AM	Sewer Inspection	CSavio 7/31/2014	Sewer	Mark Langone 7/31/2014	Street: 281 SOMERS ROAD Cross Street: Landmark:
2014-21210	7/25/2014 2:13 PM	Sewer Inspection	CSavio 7/28/2014	Sewer	7/28/2014	Street: 29 WINTERBERRY LANE Cross Street: Landmark:

2014-21209	7/25/2014 11:41 AM	Sewer Inspection	CSavio 7/25/2014	Sewer	7/28/2014	Street: Lot 1 WINTERBERRY LANE Cross Street: Landmark:
2014-21178	7/22/2014 7:48 AM	Sewer Inspection	JPescetta	Sewer	John Collins 7/25/2014	Street: 721 PARKER STREET Cross Street: Landmark:
2014-21130	7/14/2014 12:58 PM	Sewer Inspection	SAbad 7/14/2014	Sewer	7/14/2014	Street: 849 SOMERS ROAD Cross Street. Landmark:
2014-21070	7/7/2014 10:22 AM	Sewer Inspection	CSavio 7/7/2014	Sewer	Roy Esposito 7/7/2014	Street: 132 CANTERURY CIRCLE Cross Street: Landmark:
2014-21008	6/26/2014 10:43 AM	Sewer Inspection	JPescetta 6/26/2014	Sewer	Roy Esposito 6/25/2014	Street: 167 CANTERURY CIRCLE Cross Street. Landmark:
2014-20992	6/24/2014 11:31 AM	Sewer Inspection	CSavio 6/24/2014	Sewer	Roy Esposito 6/24/2014	Street: 89 MAPLESHADE AVENUE Cross Street: Landmark:
2014-20980	6/23/2014 10:38 AM	Sewer Inspection	CSavio 6/23/2014	Sewer	Roy Esposito 6/23/2014	Street: 231 PROSPECT STREET Cross Street: Landmark:
2014-20880	6/5/2014 9:54 AM	Sewer Inspection	JPescetta 6/5/2014	Sewer	Roy Esposito 6/5/2014	Street: 44 SHAW STREET Cross Street: Landmark:
2014-20878	6/5/2014 9:04 AM	Sewer Inspection	SAbad	Sewer	Roy Esposito 6/5/2014	Street: 91 COLONY DRIVE Cross Street: Landmark.
2014-20871	6/4/2014 2:07 PM	Sewer Inspection	SAbad	Sewer	Roy Esposito 6/5/2014	Street: 91 COLONY DRIVE Cross Street: Landmark:
2014-20845	6/2/2014 11:20 AM	Sewer Inspection	CSavio 6/2/2014	Sewer	Roy Esposito 6/2/2014	Street: 80 MILL ROAD Cross Street: Landmark:
2014-20810	5/28/2014 9:01 AM	Sewer Inspection	CSavio	Sewer	Roy Esposito 5/28/2014	Street: 1 DENSLOW ROAD Cross Street. Landmark: ⇒ BAYPATH
2014-20809	5/28/2014 9:00 AM	Sewer Inspection	CSavio	Sewer	Roy Esposito 5/28/2014	Street. 1 DENSLOW ROAD Cross Street: Landmark: ⇒ BAYPATH
2014-20775	5/22/2014 8:44 AM	Sewer Inspection	CSavio	Sewer	Roy Esposito 5/22/2014	Street: 499 SOMERS ROAD Cross Street: Landmark:
2014-20661	5/6/2014 10:27 AM	Sewer Inspection	JPescetta 5/6/2014	Sewer	Roy Esposito 5/6/2014	Street: 3 STURBRIDGE LANE Cross Street: Landmark.
2014-20540	4/17/2014 3:52 PM	Sewer Inspection	SAbad 4/18/2014	Sewer	Roy Esposito 4/18/2014	Street: 56 AVERY STREET Cross Street: Landmark.
2014-20496	4/14/2014 8:12 AM	Sewer Inspection	JPescetta	Sewer	Roy Esposito 4/14/2014	Street. 127 PEMBROKE TERRACE Cross Street: Landmark:
2014-20449	4/7/2014 9:24 AM	Sewer Inspection	CSavio 4/7/2014	Sewer	Roy Esposito 4/7/2014	Street. 2 WINTERBERRY LANE Cross Street: Landmark:
2014-20431	4/4/2014 10:23 AM	Sewer Inspection	CSavio	Sewer	Roy Esposito 4/4/2014	Street. 22 WINTERBERRY LANE Cross Street: Landmark:
2014-20430	4/4/2014 10:22 AM	Sewer Inspection	CSavio	Sewer	Roy Esposito 4/4/2014	Street: 16 WINTERBERRY LANE Cross Street: Landmark:
2014-20421	4/3/2014 8:31 AM	Sewer Inspection	CSavio	Sewer	Roy Esposito 4/3/2014	Street: 28 WINTERBERRY LANE Cross Street: Landmark:

Town of
LONGMEADOW, MASSACHUSETTS
31 Pondside Road – 01106
TEL (413) 567-3400 ~ FAX (413) 567-9018
E-mail: publicworks@longmeadow.org
Incorporated 1783

DEPARTMENT OF PUBLIC WORKS

February 9, 2015

Mr. Ryan C. Wingerter
Springfield Water & Sewer Commission
P.O. Box 995
Springfield, MA. 01101-0995

Dear Mr. Wingerter,

I am responding to your letter I received on January 22, 2015, concerning the new National Pollutant Discharge Elimination System Permit for the Springfield Regional Wastewater Treatment Facility. The following is a brief summary of the Town's efforts to reduce or eliminate excessive Infiltration/Inflow in 2014.

During 2014, the Town continued to perform sewer pipeline television inspections. The television inspections are used to determine joint conditions, root intrusions, sources of infiltration and help locate any structural deficiencies in the system. The videos and log forms are looked at to determine where the problem areas are located so repairs and recommendations can be made for main replacements in the future. Listed below are two sewer replacement projects that were identified in the inspections for FY14.

The Colton Place project includad replacement of 1,100 ft. of new 8" PVC pipe, 5 manholes and 26 house connections The Laurel Street project included 2,200 ft. of new 12" PVC pipe, 9 manholes and 22 house connections. These projects are several that were identified from the video inspection project because the VC sewer was cracked and broken in multiple locations allowing I/I into the collection system. Upcoming FY16 projects that will be added to the Town Warrant this spring will include replacement of 850 ft. of sewer main and 6 manholes on Knollwood Circle. Previous video showed large amounts of ground water infiltration into several manhole structures during the spring months at this location. Hazardville Road will also be added which will include 1,300 ft. of new 8" PVC pipe with 5 new manhole structures.

August 21, 2014 MassDEP conducted a Wastewater Collection System inspection. As part of their Compliance Inspection Report, Longmeadow will be required to submit an Infiltration/Inflow Analysis report by Dec 31,2017, in compliance with 314 CMR 12.04[c] 1. The Town still continues its program of sewer line maintenance which is carried out on a daily basis throughout the year. During this effort, attention is given to the condition of the manholes, excessive flows and any other abnormalities in the manholes. If excessive flows are found, crews are dispatched to find and correct the problems.

The Town of Longmeadow will continue to upgrade and improve its sewer collection system, pumping stations and maintenance operating procedures every year to help reduce I/I by continuing our efforts to locate deficiencies and correcting them with our capital projects.

If further information is required, please call.

Sincerely,

Peter W. Thurber

Assistant DPW Director

Water and Wastewater

Operations

Department of Public Works
The Town of Ludlow, Massachusetts

February 17, 2015

Mr. Ryan C. Wingerter
Collection System Superintendent
Springfield Water and Sewer Commission
P.O.Box 995
Springfield, MA. 01101-0995

Re: National Pollutant Discharge Elimination System
2014 Permit Information

Dear Mr. Wingerter:

We are responding to Springfield Water and Sewer Commission's annual request for information to support the Springfield Regional Wastewater Treatment Facility permit reporting requirements for the National Pollutant Discharge Elimination System Permit. It is our understanding the NPDES permit requires information from the Town of Ludlow identifying efforts conducted by the department to reduce infiltration and inflows to the regional sanitary sewer collection system during the 2014 calendar year. The Town of Ludlow has been and will continue to be proactive in our efforts to reduce and or eliminate excessive storm waters from entering the wastewater collection system. In 2014 the town sought proposal for conducting an Inflow and Infiltration Study and is looking forward to commencing in March 2015.

The DPW infrastructure maintenance program routinely replaces catch basin frames and grates and sewer manhole covers on town wide paving projects and throughout the system to reduce inflow to the collection system. Also, the DPW routinely maintains the system by flushing and cleaning the sewer and storm drainage systems with our Camel vacuum equipped vehicle. The sewer system problem areas are monitored and television video data is recorded to evaluate line conditions. In addition, maintenance has included regularly scheduled root removal treatment in known problem areas.

Drainage improvements in Winsor Street were constructed to eliminate potential inflow as well as sewer repairs in Winsor Street to eliminate infiltration. Several lateral repairs were also conducted to eliminate infiltration.

Please do not hesitate to call if you require any additional information regarding our efforts to reduce infiltration and inflow to the collection system.

Sincerely,

JT Gaucher, PE
Director Public Works

Cc: Board of Public Works
K. Batista, Operations Supervisor

198 Sportsmen's Road, Ludlow, Massachusetts 01056 Tel. (413) 583-5625, Fax (413) 589-1488

TOWN OF AGAWAM
Department of Public Works
1000 Suffield Street • Agawam MA 01001
Tel (413) 821-0600 • Fax (413) 821-0631

Christopher J. Golba – Superintendent

February 20, 2015

Mr. Ryan C. Wingerter
Collection System Superintendent
Springfield Water and Sewer Commission
P.O. Box 995
Springfield, MA 01101-0995

Dear Mr. Wingerter:

The City of Agawam completed the separation of its sewer and drain systems in 2000. This accomplishment greatly reduced inflow into our sewer system and eliminated our combined sewer overflows.

The Department of Public Works continues to fund the plumbing inspector in the Water Departments budget which gives us some influence in his work. He is on the watch for cellar sump pump connections to the building sewer and in the past year noticed several such installations, which we were able to have removed. Also, all new houses are required to have foundation drains installed. These drains are not allowed to be connected to the sewer.

We have added an inflow/infiltration education section to our stormwater informational pamphlet. These pamphlets are sent out with the water bills to all the residents that are using Agawam's water system. In this pamphlet we will inform residents that stormwater connections to the sewer are improper because it burdens the Town with unnecessary costs in pumping and treating clean stormwater, and may cause SSO's in neighborhood streets. We will also refer to the city ordinance and inform property owners that the DPW is available to help aid in fixing these illegal connections.

The Sewer Department/Engineering Division continue to work together using our television equipment to inspect building sewers, sewer mains and drain lines for breaks and inflow. The Engineering Division is also working on mapping Agawam's stormwater system using GIS. The Town's drainage system has been essentially mapped on GIS and we continue to refine and add information as changes are discovered. If any inter-connections between the sewer and drainage systems are discovered during this investigation, they are dealt with in a prompt manner.

We continue to monitor the flow recordings from our wastewater pumping facilities and investigate any abnormalities for possible inflow/infiltration problems. We are looking into options with United Water for improving any existing faulty flow metering at our pump stations. This will better enable us to monitor the sewer system before, during and after storm events which will lead to improved data and assist in more accurately locating inflow/infiltration connections in the future.

Should you have any questions regarding these issues please phone me at 413-821-0623.

Very truly yours,

Christopher J. Golba, Superintendent
Dept. of Public Works

Cc: Michelle Chase, PE, Town Engineer
John Decker. Deputy Superintendent
Mickey Nowak, United Water

Town of Wilbraham

DEPARTMENT OF PUBLIC WORKS
240 Springfield Street
Wilbraham, Massachusetts 01095
(413) 596-2800 ext. 208

Edmond W. Miga, Jr., P.E.
Director of Public Works

February 2, 2015

Joshua Schimmel, Director of Wastewater Operations
Springfield Water and Sewer Commission
P. O. Box 995
Springfield, MA 01101-0995

Dear Mr. Schimmel:

The Wilbraham DPW has received your letter dated January 22, 2015 requesting documentation of Efforts taken by each of the collection systems served by the Springfield Regional Wastewater Treatment Facility to reduce infiltration/inflow during the previous calendar year.

Our efforts continue to include:

- Daily monitoring of flows in two (2) key locations in Town.
- Tracking rain events to measure impacts on the system.
- Water/sewer bill notice. See enclosed.
- Periodically camera lines that are suspect of I & I with Town owned equipment.
- Emphasized the issue in the Town Report (see enclosed).
- Verbal communication with Plumbing Inspector to be aware and report and enforce connections he may find.
- Purchased a Jetvac truck to assist in cleaning and to camera line for condition.

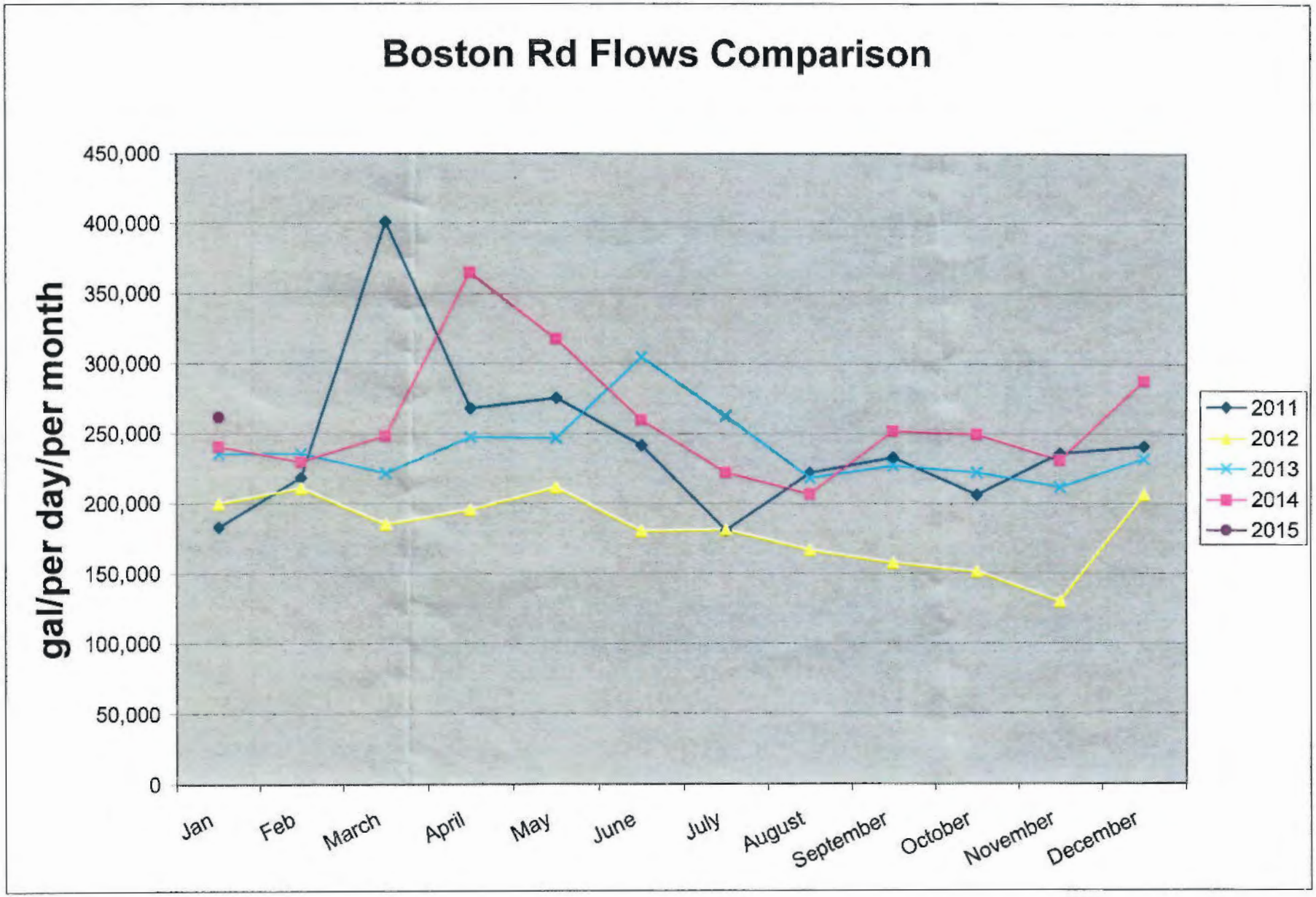
As you know, keeping our flows down has a financial incentive to reducing our bill. Hope that this documentation meets your requirements.

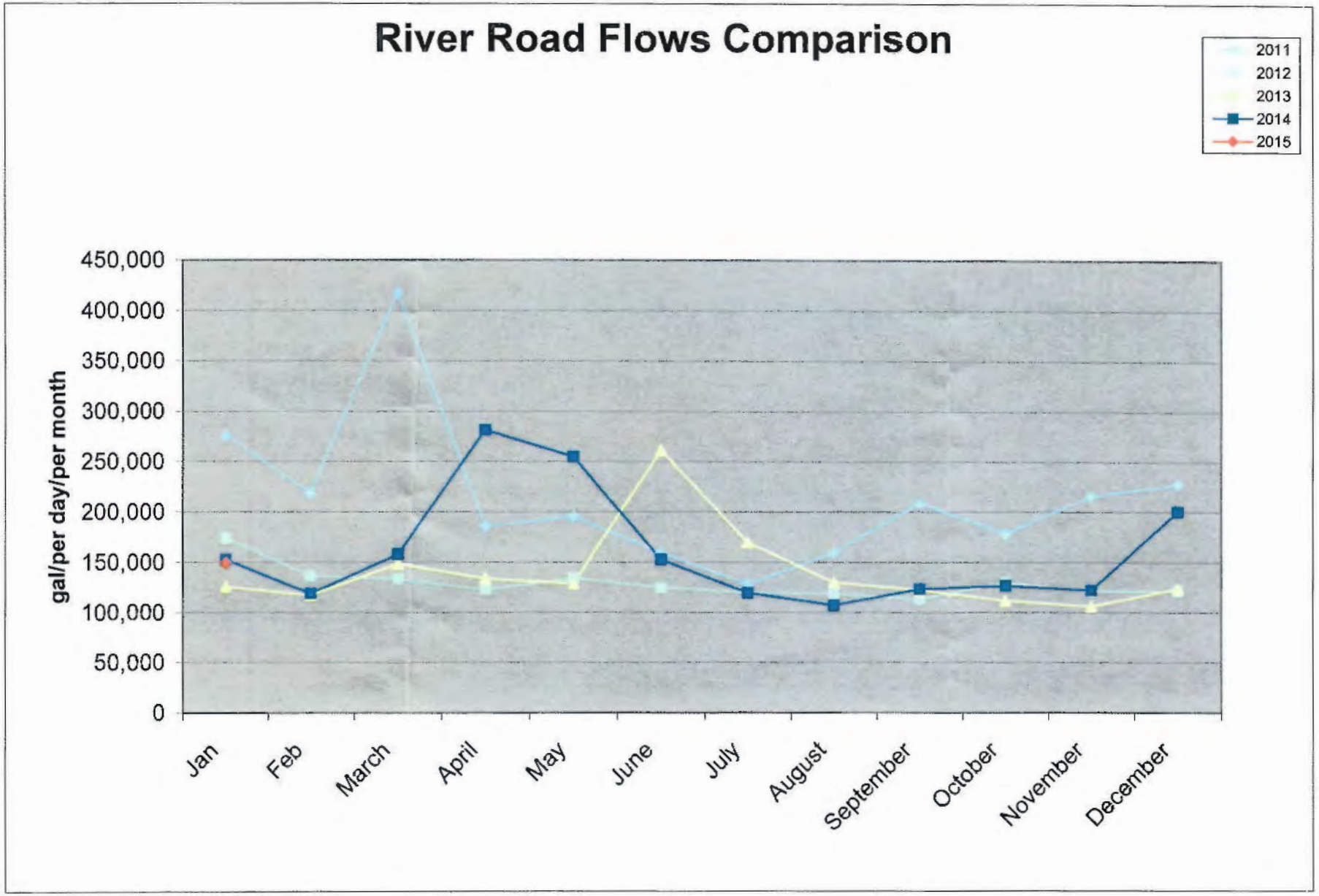
Sincerely,

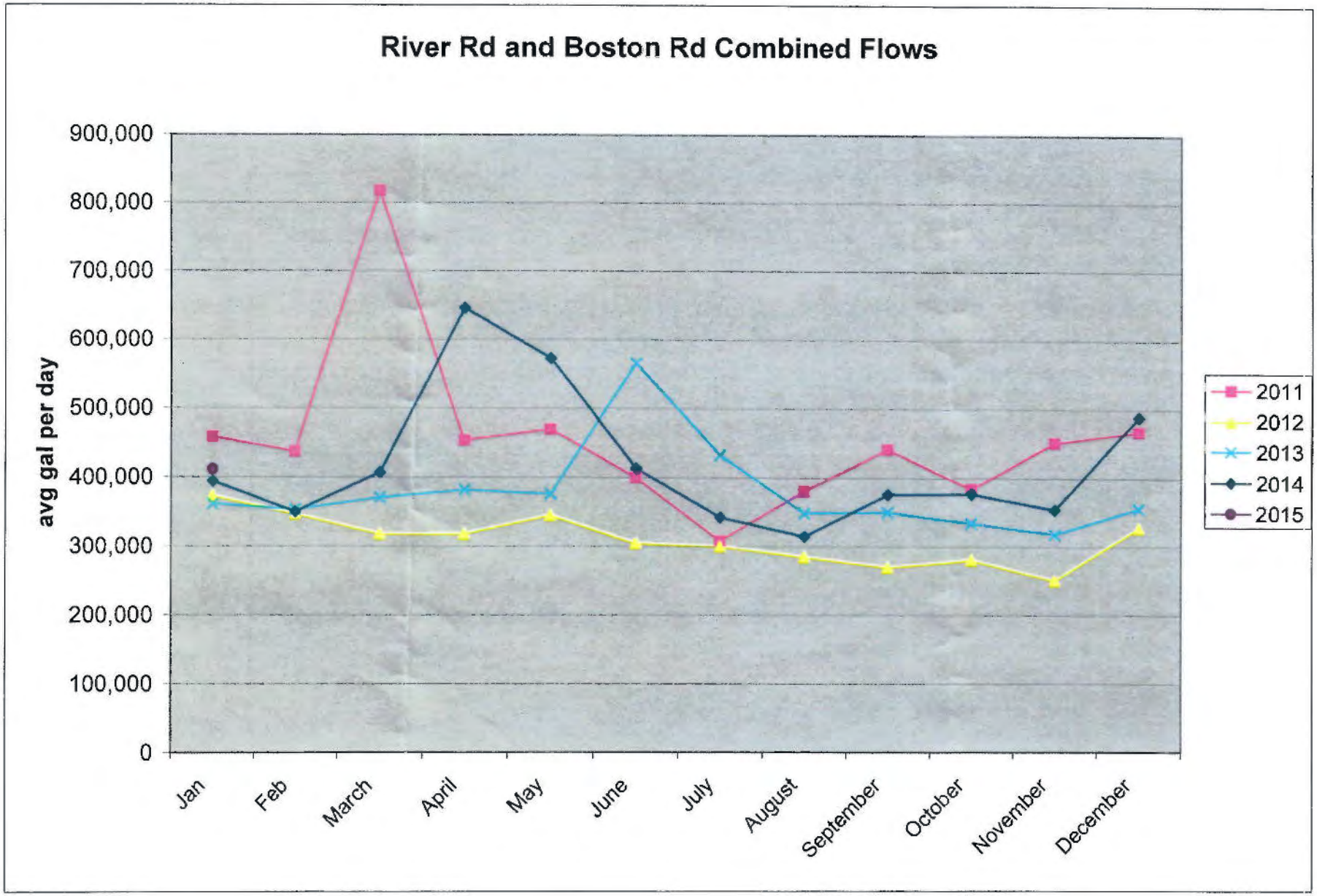
Edmond W. Miga, Jr., P.E.
Director of Public Works

EWM/dd

Enclosures


Boston Rd Flows Comparison
gal/per day/per month
450,000
400,000
350,000
300,000
250,000
200,000
150,000
100,000
50,000
0
Jan
Feb
March
April
May
June
July
August
September
October
November
December
2011
2012
2013
2014
2015


River Road Flows Comparison
2011
2012
2013
2014
2015
gal/per day/per month
450,000
400,000
350,000
300,000
250,000
200,000
150,000
100,000
50,000
0
Jan
Feb
March
April
May
June
July
August
September
October
November
December


River Rd and Boston Rd Combined Flows
avg gal per day
900,000
800,000
700,000
600,000
500,000
400,000
300,000
200,000
100,000
0
Jan
Feb
March
April
May
June
July
August
September
October
November
December
2011
2012
2013
2014
2015

DEPARTMENT OF PUBLIC WORKS

Every year the Department of Public Works looks forward to submitting the Annual Report. The Department consists of five (5) divisions: Water, Wastewater, Solid Waste, Highway and Engineering.

The following list highlights accomplishments in each division.

HIGHWAY

The Highway Division is responsible for the maintenance of approximately 125 miles of roadways and private ways.

WASTEWATER DIVISION

The division has two (2) full-time employees that maintain ten (10) pump stations with 36 miles of sewer main and pump an average of 420,000 gallons per day of wastewater to the City of Springfield for treatment. They respond to sewer backups in the road, pump station failure, as well as perform daily maintenance activities. Staff will also investigate illegal sanitary discharges and inflow and infiltration.

The Wastewater Division is an Enterprise Fund and is self-supporting. You can help keep your rates stable and system in good shape by not throwing grease or oil down the drain. Do not connect any sump pumps or stormwater drainage into the sewer system. If in doubt, please call us and we will try to assist you. These things really help you as well as everyone on the system.

Major capital expenditure was the purchase of a new sewer vac truck. This vehicle replaces and old truck we have had for twenty (20) plus year. This truck is used to clean sewer lines and pump station's wet wells. We also use it in conjunction with cameraing the sewer lines.

The Waste Water division was inspected by D.E.P. (Department of Environmental Protection) in April of 2014. A review of our system for compliance was the purpose of the inspections. Maps and reports were completed as requested by D.E.P.

The two main pump stations are the wastewater plant and River Road. Both locations are equipped with flow monitoring and sampling capabilities. With $150,000.00 of retained earnings appropriated for pump stations, improvements, we continue to move forward with keeping our pump stations in good working order.

We are pleased to report that the rates have not changed since 2010

Residential Rate	$4.10 per 100 cubic feet
Minimum charge	$52.50
Maximum charge	$492.00
Flat Rate	$270.60
Commercial Rate	$5.00 per 100 cubic feet

Wastewater Employees

Richard Zamora, DPW Foreman/Technician
Daniel Gore

All bills due the Town of Wilbraham for Water and Sewer use are payable to the Town Collector within 30 days. All abatement/hardship requests must be submitted in writing within 30 days. Each sewer bill and water bill unpaid after 30 days will be assessed a separate penalty of $25.00 each and an interest of 14 percent per annum computed from the date the bill was mailed. Unpaid water bills after 30 days will also be subject to water shut off.

Unpaid bills, including late payment penalties in the previous calendar year, may be added to the real estate property tax in the form of a lien for the current year as provided for in Mass. General Laws, Chapter 40, Section 42A through 42F, inclusive.

If the title of the property changes, the name and address of the new owner should be given to the Public Works office in order that bills may be properly rendered. Bills are sent twice a year, once in November and once in May. If you have any questions or do not receive your Water or Sewer bill, contact the Public Works office at 596-2800 ext. 208.

FREQUENTLY ASKED QUESTIONS:

How much does a typical residential customer pay for one gallon of water?
Divide residential rate by 748 gallons.

How do I calculate my water bill:
Multiply usage (cubic feet) by rate and divide by 100 = $$

How do I calculate my sewer bill:
Multiply water usage by rate and divide by 100 = $$

How many gallons are in one hundred cubic feet of water?
There are 748 gallons in one hundred cubic feet of water.

A reminder to all residents that sump pumps connected to the sanitary sewer system are illegal. The additional flows increase our costs to Springfield, which is passed on to all residents connected to the sewer system.

TOWN OF WEST SPRINGFIELD

DEPARTMENT OF PUBLIC WORKS

26 CENTRAL STREET

SUITE 17

WEST SPRINGFIELD, MA 01089-2763

Monday - Friday
8:00 AM - 4:30 PM

Tel: (413) 263-3242
Fax: (413) 734-9745

Robert J. Colson
Director

James W. Lyons, P.E.
Town Engineer

Vincent DeSantis
Deputy Director of Operations

Jeffrey R. Auer
Deputy Director of Water

Michael Pattavina
Waste Management Coordinator

Cynthia Zarichak
Office Manager

February 4, 2015

Ryan C. Wingerter
Collections System Superintendent
Springfield Water and Sewer Commission
P.O. Box 995
Springfield, MA 01101-0995

RE: Reduction of Inflow and Infiltration to the West Springfield Sewer System

Dear Mr. Wingerter:

I am writing in response to your letter to Robert J. Colson in which you request a report documenting efforts by the Town of West Springfield to reduce or eliminate excessive inflow/infiltration. I am pleased to report that West Springfield has continued to make steady progress with projects that address this issue.

Tighe & Bond, the town's consulting engineers have assisted the town with regards to infiltration investigation of the sanitary sewer system by coordinating CCTV inspection of approximately 9,450 LF of sewer mains in the Spring of 2014. They have also commenced flow isolation in Sewershed areas 3 and 6, and reported areas of high infiltration rates to Kenyon Pipeline Inspection for further inspection. Manholes were also inspected in the Spring of 2014.

In addition to the work done by Tighe & Bond, the Town of West Springfield has investigated additional sanitary sewers in streets that are candidates for paving. This resulted in cleaning and inspecting an additional 6,777 LF of sanitary sewer pipe. It is our intention to make sewer repairs prior to road work so that we will not have to cut newly paved streets.

It is the town's intention to continue to remove sources of infiltration and inflow to the sewers in West Springfield by developing capital improvement programs to remove the sources from the system.

Should you have any questions or comments, please feel free to contact me at (413) 263-3249.

Sincerely,

James W. Lyons, P.E.
Town Engineer

Cc: Robert J. Colson, DPW Director
File

ATTACHMENT 4

2014 CSO SUMMARY

2014 CSO Discharge Summary

Springfield, MA

	Discharge Summary By Site				Monitoring Method
	Site	Watershed	# of Events	Total Volume	
1	CSO 017	Mill River	18	2,615,778	downstream ultrasonic level
2	CSO 019	Mill River	9	2,149,502	upstream ultrasonic level
3	CSO 024	Mill River	9	391,721	downstream ultrasonic level
4	CSO 025	Mill River	18	1,341,591	downstream ultrasonic level
5	CSO 045	Mill River	19	1,545,051	downstream ultrasonic level
6	CSO 046	Mill River	18	3,316,434	downstream ultrasonic level
7	CSO 048	Mill River	16	1,319,260	downstream ultrasonic level
		Mill River Total =	**107**	**12,679,336**	
20	CSO 034	Chicopee River	21	1,278,387	downstream ultrasonic level
21	CSO 035	Chicopee River	11	2,462,941	downstream ultrasonic level
22	CSO 037A	Chicopee River	10	601,251	downstream ultrasonic level
23	CSO 036A	Chicopee River	17	3,485,464	downstream ultrasonic level
		Chicopee River Total =	**59**	**7,828,043**	
8	CSO 007	Connecticut River	2	940,720	downstream ultrasonic level
9	CSO 008	Connecticut River	0	0	downstream ultrasonic level
10	CSO 010	Connecticut River	47	77,493,651	downstream ultrasonic level
11	CSO 011	Connecticut River	4	475,454	upstream ultrasonic level
12	CSO 012	Connecticut River	53	143,895,904	downstream ultrasonic level
13	CSO 013	Connecticut River	53	18,302,012	downstream ultrasonic level
14	CSO 014	Connecticut River	35	10,215,029	downstream ultrasonic level
15	CSO 015A	Connecticut River	27	11,965,970	downstream ultrasonic level
16	CSO 015B	Connecticut River	11	844,374	downstream ultrasonic level
17	CSO 016	Connecticut River	40	74,421,717	downstream ultrasonic level
18	CSO 018	Connecticut River	14	735,423	downstream ultrasonic level
19	CSO 049	Connecticut River	25	2,486,428	downstream ultrasonic level
		Connecticut River Total =	**311**	**341,776,683**	
		System Total =	**477**	**362,284,062**	
	042 Inf Bypass	Connecticut River	**16**	**16,313,000**	weir ultrasonic level
	WWTP Sec Bypass	Connecticut River	**31**	**121,040,000**	calculation

Discharge Summary By Month		
Month	Avg Rain	Total Volume
January	3.29	42,708,065
February	1.37	3,024,882
March	4.74	58,593,290
April	4.63	33,900,575
May	4.75	61,786,926
June	1.98	7,714,738
July	5.04	33,522,846
August	5.04	51,852,941
September	1.13	1,377,690
October	4.81	26,380,315
November	3.38	4,306,066
December	4.81	37,115,729
Total	**44.98**	**362,284,062**

Rainfall Summary	
Site	Total Rain
RG01	48.65
RG02	38.17
RG03	40.75
RG04	45.79
Average	43.34
WWTP Rain	52.10

Number of Overflows	
030 Liberty	0
031 Canton	0
032 Carew	0
040 Tiffany	0
050 IOPS	1

CMOM Program Implementation 2014 Annual Report

Pursuant to Administrative Order Docket No. 08-037 (AO), the Springfield Water and Sewer Commission (Commission) submits the following CMOM Program Implementation Annual Report for 2014. This report is a summary of the actions taken by the Commission during the 2014 calendar year to advance the CMOM Program.

A. Sanitary Sewer Overflow Summary

Based on information provided in the CMOM Self Assessment Checklist and recent reporting trends, the Commission has seen a steady decrease in the number of Sanitary Sewer Overflows. The Commission reports all SSO's that occur within the wastewater collections system in this report with the exception of Combined Sewer Overflows from Permitted CSOs. SSO's are defined as a sewer backup which results in an overflow as a result of insufficient capacity, obstruction of flow, or structural failure of the pipe/conduit. In 2006 the Commission recorded 141 SSO's. There has been a decrease in each of the past eight years with 36 SSO's being reported in 2014. This represents a 75% decrease in SSOs since the initiation of this program. This is a result of the Commission's commitment to the cleaning and inspection of the entire sewer system as part of its Collection System Asset Management Program. Appendix A of this report presents all the SSO's for CY 2014. Pursuant to the requirements of the AO, the following information is presented in tabular form:

- Date and time of SSO
- Date and time SSO was resolved
- Location of SSO
- Source of Notification
- Cause of SSO
- Measures taken to resolve SSO
- Date of the last SSO that occurred at the same location
- Estimated volume of overflow
- Discharge location

B. Corrective Action Plan (CAP) Implementation

In 2014 the Commission continued to advance all of the major components of the CMOM Program. Appendix D summarizes the Wastewater Operations Budget for 2014. Below is a summary of additional activities that were completed by the Commission in 2014:

Pipe Installation:

In 2014 the Commission continued work on various capital projects that included repair, replacement, and rehabilitation of portions of the collection system. These improvements were designed and constructed to provide a better level of sewer and drain service to Commission customers. These projects are identified in Appendix D.

Pipe and Manhole Cleaning:

Each year the Commission implements a cleaning program using Commission staff, contract operations staff, and hired contractors. The tables below summarize the results of the 2014 program.

CONTRACT CLEANING		
Size of Pipe	**Type of Cleaning**	**Footage**
6"-12" Pipe	Light Cleaning	127,994
13"-20" Pipe	Light Cleaning	690
21"-29" Pipe	Light Cleaning	0
30"-39" Pipe	Light Cleaning	0
40"-49" Pipe	Light Cleaning	1,342
>50" Pipe	Light Cleaning	0
6"-12" Pipe	Medium Cleaning	187,599
13"-20" Pipe	Medium Cleaning	7,985
21"-29" Pipe	Medium Cleaning	1,197
30"-39" Pipe	Medium Cleaning	1,498
40"-49" Pipe	Medium Cleaning	0
>50" Pipe	Medium Cleaning	0
6"-12" Pipe	Heavy Cleaning	92,411
13"-20" Pipe	Heavy Cleaning	11,627

21"-29" Pipe	Heavy Cleaning	1,619
30"-39" Pipe	Heavy Cleaning	2,362
40"-49" Pipe	Heavy Cleaning	1,904
>50" Pipe	Heavy Cleaning	4,375
Pipes more than 1/4 Full	Heavy Cleaning	21,577
Total Footage		**464,180**

COMMISSION CLEANING		
Size of Pipe	**Type of Cleaning**	**Footage**
Various	Various	229,608

GRIT REMOVAL	
Cleaning Entity	**Tons Removed**
Commission Contract	570
Commission	562
United Water	224.
Total	**1456**

Appendix C summarizes additional CMOM tasks performed by United Water.

Clinton Street Grit Removal:

The Commission has an in-line grit removal system on the Connecticut River Interceptor (CRI) maintained by the contract operator United Water. In 2014 United Water removed over 191.3 tons of grit from the Clinton Street Grit Pit. The removal of this material increased the capacity and level of service in the CRI by capturing the material before it was deposited in the pipe.

PACP/MACP Pipe and Manhole Inspection:

The Commission staff and consulting engineers were responsible for the inspection of over 500,000 feet of sewer and drain pipe in 2014. Additionally, over 1,189 manholes were inspected. All inspections were completed using the nationally standardized system of PACP and MACP. Commission staff have been trained and licensed in the program. Collection of pertinent information is being standardized as the Commission is advancing it's Asset Management Program.

Collection System Mapping:

In 2014 the Commission advanced its efforts to refine the collection system mapping. Typical annual activities include updating the sewer book, completing sewer service cards for new/replacement services, and improving the sewer GIS. In 2014 727 points in the collection system were located by GPS. As a result the spatial attributes of more 700 manholes and 1000 pipe segments were updated.

Records/Digital Archive:

In 2012 the Commission and its consulting engineers scanned 26,000 archived plans and geo-spatially linked 20,000 of them to the GIS system. The Commission is expanding this program in 2014, with the goal of digitally archiving and geo-spatially linking all record drawings. In 2014 this system was being integrated into new asset management software.

Work Order Management/ Computerized Maintenance Management System

In 2014 the Commission continued to customize and refine its newly implemented maintenance software. This system is the basis for tracking and trending of SSO's and other operational parameters. The system is being further refined as more sewer collection system staff are trained in its use. At the beginning of each year the Commission's staff review the previous year's data and plan/schedule sewer assessment and rehabilitation based on any SSO trends. Appendix B summarizes some of the work performed by the Commission in CY2014.

C. Collection System Mapping

Sewer Book

The Commission maintains a detailed sewer book (wastewater collection system atlas) that covers the entire collection system. This document is updated as changes are made to the collection system or as record discrepancies are discovered.

ArcGIS Geodatabase

The Commission maintains an ArcGIS geodatabase which also covers the entire collection system. In 2014 the Commission expanded the detail and accuracy of its GIS mapping program. See above for details of work completed in 2014.

D. Wastewater Collection System Budget

Please see Appendix D for the Commission's FY 2014 and FY 2015 Wastewater Collection System Budget and FY 2014 and FY 2015 Capital Improvements Budget

E. Programs for the Reduction of Extraneous Flows and FOG (Fats, Oils, and Grease)

In 2014 the Commission continued construction of two projects that will remove infiltration and stormwater from the Commission's combined sewer system. These projects will continue in CY 2015. Both projects include new pipe and manholes, rehabilitation of existing infrastructure, and some targeted sewer separation.

The Commission's Rules and Regulations prohibit the disposal of FOG to the collections system in amounts greater than 100 mg/L or in amounts that result in restricting flow. As of July 1, 2009, the Commission updated the Rules and Regulations to include descriptions and requirements for grease control devices in existing and new facilities, inspections, maintenance, and record keeping requirements by owners, the right to inspect by Commission personnel, and enforcement actions for non-compliance by owners. An aggressive outreach and education program was initiated in 2012 and will continue in 2015.

F. Easement Maintenance Programs

The Commission has an existing book identifying cross country sewers that is used as a reference for inspection and maintenance. Advancement of the sewer assessment program and GIS mapping programs intend to further identify and address maintenance needs for cross country and easement areas. The information gathered from these activities will be evaluated and integrated with short and long term planning for maintenance of easements. A line item for maintaining easements is now in the operations budget and a capital project is being developed for CY2015. The Commission has also begun to install visible sewer markers on cross country sewers.

G. CY 2014 CMOM Program

The Commission has continued collection system evaluations, hydraulic capacity analyses, and development of a long term capital improvement plan for the collection system as part of various ongoing programs. In 2015 the Commission plans to undertake the following measures to advance the CMOM Program:

- Continuation of System Assessment Program
- Internal inspections of collection system assets (e.g., MACP inspections and PACP inspections)
- Improvements to geodatabase detail and accuracy via inspections, record plans, and GPS
- Calibrate and improve the wastewater collection system hydraulic model

Appendix A

SSO Report

Between Jan 1, 2014 12:00 AM and Dec 31, 2014 11:59 PM

INFOR

WORK ORDER	DATE/TIME REPORTED	WORK COMPLETED	LOCATION	NOTIFICATION SOURCE	CAUSE OF SSO	MEASURES TAKEN	EST GALLONS	DISCHARGE LOCATION	RECEIVING WATER	REPORTED PROBLEM	FAILURE
767421	Jan 17, 2014 2:55:00 PM	Jan 17, 2014 7:30:00 PM	118 DARLING ST - INDIAN ORCHARD	Property Owner	Root Blockage	Jetted	d. < 10,000 gal	Basement		Sewer Backup	Standing Main
767422	Jan 17, 2014 3:00:00 PM	Jan 17, 2014 3:45:00 PM	UNION ST - SPRINGFIELD	WINGERTER, RYAN	Unknown Blockage	Jetted	d. < 10,000 gal		CONNECTICUT RIVER	Sewer Backup	Standing Main
769480	Jan 31, 2014 8:36:00 AM	Jan 31, 2014 10:20:00 AM	14 POMONA ST-SPRINGFIELD	Property Owner	Root Blockage	Jetted	d. < 10,000 gal	Basement		Sewer Backup	Standing Main
770116	Feb 8, 2014 2:00:00 PM	Feb 8, 2014 2:40:00 PM	36 PARAMOUNT ST-SPRINGFIELD	Property Owner	Paper/Rags Clog	Jetted	d. < 10,000 gal	Basement		Sewer Backup	Standing Main
773834	Mar 14, 2014 9:38:00 AM	Mar 14, 2014 11:30:00 AM	28 MEDFORD ST-SPRINGFIELD	Property Owner	Grease Blockage	Jetted	d. < 10,000 gal	Basement		Sewer Backup	Standing Main
774153	Mar 15, 2014 1:40:00 PM	Mar 15, 2014 3:30:00 PM	55 CALHOUN STREET-SPRINGFIELD	Property Owner	Grease Blockage	Jetted	d. < 10,000 gal	Basement		Sewer Backup	Standing Main
774035	Mar 18, 2014 2:02:00 AM	Mar 18, 2014 2:30:00 PM	44 PINEGROVE ST-SPRINGFIELD	Property Owner	Root Blockage	Jetted		Basement		Sewer Backup	Standing Main
777097	Mar 31, 2014 12:00:00 AM	Mar 31, 2014 12:00:00 AM	105 NEWHOUSE ST-SPRINGFIELD	Property Owner	Grease Blockage	Jetted	d. < 10,000 gal	Basement		Sewer Backup	Standing Main
777925	Mar 31, 2014 10:00:00 AM	Mar 31, 2014 2:00:00 AM	71 WACHUSETT ST-SPRINGFIELD	Property Owner	Grease Blockage	Jetted	d. < 10,000 gal	Basement		Sewer Backup	Standing Main
777093	Mar 31, 2014 8:00:00 PM	Mar 31, 2014 2:00:00 AM	205 NEWHOUSE ST-SPRINGFIELD	Property Owner	Grease Blockage	Jetted	d. < 10,000 gal	Basement		Sewer Backup	Standing Main
777222	Apr 1, 2014 12:00:00 AM	Apr 1, 2014 12:00:00 AM	72 MAYHER ST-SPRINGFIELD	Property Owner	Grease Blockage	Jetted	d. < 10,000 gal	Basement		Sewer Backup	Standing Main
777220	Apr 1, 2014 4:30:00 PM	Apr 1, 2014 10:30:00 PM	62 MAYHER ST-SPRINGFIELD	Property Owner	Pump/Lift Station Failure	Jetted	d. < 10,000 gal	Basement		Sewer Backup	Standing Main
779393	Apr 13, 2014 12:25:00 PM	Apr 13, 2014 7:15:00 PM	198 MALLOWHILL RD-SPRINGFIELD	Property Owner	Grease Blockage	Jetted	d. < 10,000 gal	Basement		Sewer Backup	Standing Main
779409	Apr 13, 2014 12:25:00 PM	Apr 13, 2014 7:15:00 PM	206 MALLOWHILL RD-SPRINGFIELD	Property Owner	Grease Blockage	Jetted	d. < 10,000 gal	Basement		Sewer Backup	Standing Main
779386	Apr 13, 2014 1:55:00 PM	Apr 13, 2014 4:15:00 PM	88 GAIL ST-SPRINGFIELD	Property Owner	Grease Blockage	Jetted	d. < 10,000 gal	Ground Surface	PORTER LAKE	Sewer Backup	Standing Main
784813	May 1, 2014 8:30:00 AM	May 1, 2014 10:30:00 AM	421 TINKHAM RD-SPRINGFIELD	Property Owner		Jetted	d. < 10,000 gal	Basement	S BRANCH MILL RIVER	Sewer Backup	Standing Main
789182	May 12, 2014 12:00:00 AM	May 12, 2014 12:00:00 AM	351 BRIDGE STREET-SPRINGFIELD	Property Owner			b. > 100,000 and < 1,000,000 gal	Street	CONNECTICUT RIVER	Sewer Backup	
789185	May 23, 2014 12:00:00 AM	May 23, 2014 12:00:00 AM	170 GROCHMAL AV - INDIAN ORCHARD	Property Owner	Insufficient Capacity-Rain Event		b. > 100,000 and < 1,000,000 gal	Ground Surface	CHICOPEE RIVER	Sewer Backup	Standing Main
788101	May 26, 2014 12:00:00 AM	May 26, 2014 12:00:00 AM	54 FAIRHAVEN DR - INDIAN ORCHARD	Property Owner	Grease Blockage	Jetted	d. < 10,000 gal	Basement		Sewer Backup	Standing Main
791468	Jun 17, 2014 12:00:00 AM	Jun 17, 2014 12:00:00 AM	Doyle Street	JACKSON, EDWARD	Root Blockage	Jetted	d. < 10,000 gal	Ground Surface	CHICOPEE RIVER	Sewer Backup	Standing Main
794467	Jul 1, 2014 5:55:00 PM	Jul 1, 2014 8:45:00 PM	64 LOUIS RD-SPRINGFIELD	Property Owner	Grease Blockage	Jetted	d. < 10,000 gal	Basement		Sewer Backup	Standing Main
796009	Jul 17, 2014 12:00:00 AM	Jul 17, 2014 12:00:00 AM	SUNRISE TER - SPRINGFIELD	Property Owner	Grease Blockage	Jetted	c. > 10,000 and < 100,000 gal	Ground Surface	NORTH BROOK	Sewer Backup	Standing Main
801178	Aug 13, 2014 12:00:00 AM	Aug 13, 2014 12:00:00 AM	30 CHURCH STREET-SPRINGFIELD	Property Owner	Insufficient Capacity-Rain Event	Advised Customer	d. < 10,000 gal	Basement		Sewer Backup	Blocked Service Line
801184	Aug 13, 2014 12:00:00 AM	Aug 13, 2014 12:00:00 AM	40 CHURCH ST-SPRINGFIELD	Property Owner	Insufficient Capacity-Rain Event	Advised Customer	d. < 10,000 gal	Basement		Sewer Backup	Blocked Service Line
801186	Aug 13, 2014 12:00:00 AM	Aug 13, 2014 12:00:00 AM	2469-2475 MAIN ST-SPRINGFIELD	Property Owner	Insufficient Capacity-Rain Event	Advised Customer	d. < 10,000 gal	Basement		Sewer Backup	Standing Main
801210	Aug 13, 2014 12:00:00 AM	Aug 13, 2014 12:00:00 AM	18 MORGAN ST-SPRINGFIELD	Property Owner	Insufficient Capacity-Rain Event	Advised Customer	d. < 10,000 gal	Basement		Sewer Backup	Standing Main
801214	Aug 13, 2014 12:00:00 AM	Aug 13, 2014 12:00:00 AM	28 OSGOOD ST-SPRINGFIELD	Property Owner	Insufficient Capacity-Rain Event	Advised Customer	d. < 10,000 gal	Basement		Sewer Backup	Standing Main
801216	Aug 13, 2014 12:00:00 AM	Aug 13, 2014 12:00:00 AM	63 VAN NESS ST-SPRINGFIELD	Property Owner	Insufficient Capacity-Rain Event	Advised Customer	d. < 10,000 gal	Basement		Sewer Backup	Standing Main
801266	Aug 13, 2014 12:00:00 AM	Aug 13, 2014 12:00:00 AM	118 GOVERNOR ST-SPRINGFIELD	Property Owner	Insufficient Capacity-Rain Event	Advised Customer	d. < 10,000 gal	Basement		Sewer Backup	Standing Main
801267	Aug 13, 2014 12:00:00 AM	Aug 13, 2014 12:00:00 AM	117 GOVERNOR ST-SPRINGFIELD	Property Owner	Insufficient Capacity-Rain Event	Advised Customer	d. < 10,000 gal	Basement		Sewer Backup	Standing Main
801271	Aug 13, 2014 12:00:00 AM	Aug 13, 2014 12:00:00 AM	MILL ST - SPRINGFIELD	Property Owner	Insufficient Capacity-Rain Event	Advised Customer	d. < 10,000 gal	Street	MILL RIVER	Sewer Backup	Standing Main
802019	Aug 13, 2014 12:00:00 AM	Aug 13, 2014 12:00:00 AM	1553-1573 MAIN ST-SPRINGFIELD	Property Owner	Insufficient Capacity-Rain Event	Advised Customer, recommended check valve	d. < 10,000 gal	Basement		Sewer Backup	Surcharged Main
803678	Aug 27, 2014 12:00:00 AM	Aug 27, 2014 12:00:00 AM	BELMONT AVE - SPRINGFIELD	Property Owner			d. < 10,000 gal	Street		Sewer Backup	
811339	Oct 7, 2014 12:00:00 AM	Oct 7, 2014 12:00:00 AM	285 DORSET ST-SPRINGFIELD	Property Owner	Grease Blockage	Jetted	d. < 10,000 gal	Basement		Sewer Backup	Standing Main
811801	Oct 14, 2014 10:07:00 AM	Oct 14, 2014 12:00:00 AM	MILTON CT - SPRINGFIELD	JACKSON, EDWARD	Grease Blockage	Jetted	d. < 10,000 gal	Ground Surface		Sewer Backup	Standing Main

SSO Report

Between Jan 1, 2014 12:00 AM and Dec 31, 2014 11:59 PM

WORK ORDER	DATE/TIME REPORTED	WORK COMPLETED	LOCATION	NOTIFICATION SOURCE	CAUSE OF SSO	MEASURES TAKEN	EST GALLONS	DISCHARGE LOCATION	RECEIVING WATER	REPORTED PROBLEM	FAILURE
822494	Dec 22, 2014 12:00:00 AM	Dec 22, 2014 12:00:00 AM	ENFIELD ST - IO - SPRINGFIELD	Property Owner	Unknown Blockage	Jetted	d. < 10,000 gal	Street		Sewer Backup	Blocked Service Line

36 Summary

This information is based on work orders with a date reported Between Jan 1, 2014 12:00 AM and Dec 31, 2014 11:59 PM

Date/Time Reported & Work Completed are the dates and times entered on the work order.
Location is the street or address point selected as equipment on the work order.
Notification Source is the "Reported By" field on the work order.
Cause of SSO is the "Cause Code" field on the work order.
Measures Taken is the "Action Code" field on the work order.
EST Gallons Discharge Location, and Recieving Water are the "Estimated Overflow Volume", "SSO Discharge Location", and "SSO Receiving Water" custom fields on the work order.
Reported Problem is the "Problem Code" field on the work order.
Failure is the "Failure Code" field on the work order.

Appendix B

Sewer Collection Work Summary

Date Range: Between Jan 1, 2014 and Dec 31, 2014

Sewer Back Up Work Orders:	788	
Advised Customer:	309	
Petitions:	559	
Investigations, Odors, MH Cover Work Orders:	137	
Work Orders with Rodding:	306	
Work Orders with Standing Main:	49	
Haz-Mat Calls:	0	
SSOs:	36	
Syphon Inspection WOs:	271	
Total Blocked Syphons:		0
Sanitary Repairs	120	
Sanitary Repair Pipe Installed(ft):		1319
House Connection Repairs:	114	
House Connection Repair Pipe Installed(ft):		1978.9
Cave-Ins:	149	
Patching/Restoration/Loam & Seed:	276	
Sewer Jetted(ft):	229,608	
Mahnoles Cleaned:	960	

This information is based on work orders completed Between Jan 1, 2014 and Dec 31, 2014

Sewer Back Ups require: Standard work order to be "SEW002."
Advised Customer requires: Action code to be "SWR3009."
Petitions require: Petition no. to not be empty
Rodding requires: Action code to be "SWR3011" or "SWR3001"
Investigations, Odors, MH Covers require: Standard work order to be "SEW004."
Standing Mains require: Failure code to be "SWR1000."
Haz Mat Calls require: Standard work order to be "SEW009."
SSOs require: The SSO CF to be 'Y' and the date reported to be Between Jan 1, 2014 and Dec 31, 2014
Syphon Inspections require: Non cancelled PM syphon inspection work orders.
Blocked Syphons: Total number of reported blocked syphons from daily inspections.
Sanitary Repairs require: Standard work order to be "SEW011" or "SEW012."
Sanitary Repair Pipe Installed(FT): Total reported in the Pipe Installed Custom Fields.
House Connections require: Standard work order to be "SEW010"
House Connection Repair Pipe Installed(FT): Total reported in the Pipe Installed Custom Fields.
Cave-Ins require: Problem code to be "SWR0005" or standard work order to be "SEW006."
Patching/Restoration/Loam & Seed requires: Standard work order to be "SEW007" or "SEW008."
Sewer Jettings require: Custom Field jetted ft. to not be blank.
Manholes Cleaned requires: Custom field MH cleaned to not be blank.

Appendix C

United Water's Wastewater Collection System Operation and Maintenance Program and Record Keeping 2014

Location	Task	Frequency	Responsibility	Hard Copy Records	Hard Copy Record Location	Electronic Data	Electronic Data Location
Clinton Street Grit Pit							
Clinton Street Grit Pit	Grit level monitoring	Weekly	United Water Maintenance Dept. Collections Group	Weekly Grit Pit Monitoring Log Sheet	Grit Pit Notebook in Collections Supervisor's Office	Master Monitoring and Cleaning Log, PM Work Order COL-SPFLD-CLIN-GPIT	CMMS MP2
Clinton Street Grit Pit	Grit Pit Cleaning	As Required	United Water Maintenance Dept Collections Supervisor	Monthly Work Order & Contractor's Work Ticket	Vendor File in Administration Office	Work Order COL-SPFLD-CLIN-GPIT, Master Monitoring and Cleaning Log	CMMS MP2
Clinton Street Grit Pit	Monitoring and Cleaning Activity Summary	Monthly	United Water Maintenance Dept	Clinton Street Grit Pit Monthly Summary Report	Monthly Client Report	Weekly Grit Level Monitoring and Grit Quantities Removed	UW Server - S:/Collection System/Clinton Street Grit Pit/Clinton Street Grit Pit.XLSX, Opps Win Database
Connecticut River Interceprtor Sewer Cleaning and Sewer CCTV							
CT River Interceptor	Heavy Cleaning	Yearly	United Water Maintenance Dept Collections Supervisor	Cleaning Activity Reports	UW Central Central File Room	Connecticut River Interceptor Sewer Cleaning Summary Report	UW Server - S:/Collection System/Springfield Interceptor System/Cleaning Summary Reports/
CT River Interceptor	Focus Areas Spot Cleaning	Yearly	United Water Maintenance Dept Collections Supervisor	Cleaning Activity Log	Interceptor Cleaning Notebook in Collections Supervisor's Office	Work Order - COL-SINTRCPT-GRT-CLEAN Sewer Grit Quantities Removed	CMMS MP2 PM Work Order History, Opps Win Databse
CSO Outfall Flood Gate and Sluice Gate Maintenance							
Flood Outfall Sluice, Flood Door and Backwater Flap Gates	Inspection, cleaning, exercising and lubrication	Quarterly	United Water Maintenance Dept Collections Group	Flood Gate Inspection and PM Activity Log and Flood Station Log Book Entries	Flood Gate Inspection and PM Activity Log Sheet and Flood Station Log Book	Preventative Work Order - COL-SPFLD-FLOOD-GATES	CMMS- MP2 PM Work Order Hisrtory
Flood Outfall Sluice, Flood Door and Backwater Flap Gates	Operation (Open/Close)	As Needed	United Water Maintenance Dept Collections Group	Flood Gate Status Board, Work Order, Flood Gate Operation Log and Monthly Flood Gate Summary Report	Collections Sytem Supervisor's Office, CMMS MP2 and Monthly Client Report	Corrective Work Order	CMMS-MP2 Corrective Work Order History, UW Server - S:/Collection System/Flood Control Gate Status/Flood Gate Status Log.xls
Wastewater Pump Stations							
Sanitary Pump Stations	Regulatory Mandated Physical Inspections	2x's weekly	United Water Maintenance Dept Collections Group	Daily Station Check Log Sheet, Pump Station Log Book Entries	Collections Supervisor's Office, individual Pump Stations	Station Check PM Weekly Work Order	CMMS-MP2 PM Work Order History
Sanitary Pump Stations	Corrective Maintenance	As Performed	United Water Maintenance Dept Collections Group	Work Order, Pump Station Log Book Entry	Collections Supervisor's Office, individual Pump Station Log Books	Corrective Malantenance Work Order	CMMS-MP2 Corrective Work Order History
Sanitary Pump Stations	Alarm Event Reporting	When Alarm Event Occurs	United Water Operations Group Senior Operator	Springfield Pump Station Incident Report	Current Month - SWTO Office, Prior Months - Collection System Supervisor's Office	NA	NA
Sanitary Pump Stations	Pump Station Monthly Summary Reporting	Monthly	United Water Maintenance Dept .	Alarm Log Summary, Collection System Report, Pump Run Time Report, Pump Station Report	Monthly Client Report	Pump Station Monthly Alarm Symmary Report and Pump Station Monthly Data Historian Report	UW Server - S:/Collection System/Pump Station Reports/Pump Stations.xls, UW Server - S:/Collection System/Springfield Pumping Stations/Monthly Reports/Year/Month/Springfield Alarm Summary Report.xls
Combined Sewer Overflows							
CSO Weirs/Outfalls	Regulatory Mandated Physical Inspections	Twice Weekly	ADS and Operations Superintendent	Weekly CSO Inspection Log	Current Month - SWTO Office, Prior Months - Collection System Supervisor's Office, Monthly Client Report	NA	NA
CSOs	DWO Alarm Response	When Alarm Event Occurs	SWTO & Operations Superintendent	DWO Event Reports to EPA and MADEP, CSO Physical Inspection Report	Centrial File Room, Regulatory Files/NPDES MA 010331, Collections System Supervisor's Office	Alarm event, acknowledgement, clearing and comments record	ADS IntelliServe Data Base and Reporting System - Alarm History Log
CSOs	DWO Event Review	Daily	Operations Superintendent & Project Manager			Prior 24 hour period DWO Event Daily Report	ADS IntelliServe Data Base and Reporting System - Daily Reports

United Water's Wastewater Collection System Operation and Maintenance Program and Record Keeping 2014

Location	*Task*	*Frequency*	*Responsibility*	*Hard Copy Records*	*Hard Copy Record Location*	*Electronic Data*	*Electronic Data Location*
CSOs	CSO Activation Review	Monthly	ADS and Operations Superintendent	Monthly CSO Activation Report	Monthly Client Report	Monthly CSO Activation Report	ADS IntelliServe Data Base and Reporting System - Activation Report UW Server - S:/Collection System/CSO Monthly Activation Report.xls
CSOs	CSO Activation Summary and Discharge Quantification	Monthly	ADS and Operations Superintendent	Annual CSO and Nine Mininum Controls Report	Centrial File Room, Regulatory Files/NPDES MA 010331	Monthly and Annual CSO Discharge Reports	UW Server - S:/Management/CSO Discharge Quantities/ CSO Overflow Volumes Jan to Dec (year).xls
CSOs	Major Service on Monitoring Equipment	Monthly	ADS and Operations Superintendent	Monthly Summary of Major Service Conducted	Monthly Client Report	NA	NA
System Flow Metering Stations							
Ludlow, Agawam, and West Springfield System Connections, SRWTF Channels 1 , 2, 3 and 4	Data Download	Monthly	I&C Supervisor	NA	NA	Meter 15 minute flow data	UW Server - S:/SWSC/OCMdata/Year/Month/
Ludlow, Agawam, and West Springfield System Connections, SRWTF Channels 1 , 2 , 3 and 4	PM/Calibration	6 months	I&C Supervisor	Vendor Calibration Reports	I&C Supervisors Office	CMMS - MP2	PM Work Order History

Appendix D

Three Year Capital Improvement Program for Fiscal Years 2014 - 2016
Including One Year Capital Program Budget for Fiscal Year 2014

As approved by the Commission Thursday June 13, 2013.

WATER SUPPLY & TRANSMISSION

			2014 CAPITAL PROGRAM BUDGET	2015 - 2016 CAPITAL PROGRAM	
PROJECT ID	PROJECT NAME	SOURCE OF FUNDS	FY 2014	FY 2015	FY 2016
004-0007	Dam Maintenance/Various Locations	Revenues/Reserves	$300,000	$300,000	$0
004-0019	Watershed Roads	Revenues/Reserves	$0	$0	$400,000
005-0024	Coagulant Feed and Mixing System	Revenues/Reserves	$30,000	$0	$0
005-0026	Treatment System Assessment & Design	Revenues/Reserves	$300,000	$500,000	$500,000
005-0027	Water Treatment System Improvements	Revenues/Reserves	$275,000	$200,000	$200,000
005-0033	West Parish Filters Road & Drainage Improvements	Revenues/Reserves	$0	$125,000	$0
005-0037	Raw Water Piping & Control Valve Redundancy	Bond	$0	$0	$250,000
005-0039	DBP Stage II Compliance Upgrade	Bond	$0	$0	$400,000
005-0040	WPF Clear well Rehabilitation	Bond	$0	$0	$400,000
005-0041	Rehabilitation of Ludlow SSF Distribution Struc.	Revenues/Reserves	$200,000	$0	$0
06A-0008	Transmission System Assessment & Design	Revenues/Reserves	$500,000	$500,000	$500,000
06A-0014	Transmission System Rehabilitation	Revenues/Reserves	$100,000	$100,000	$100,000
06A-0017	NOVA/Chicopee Crossing Phase II	Bond	$0	$0	$3,000,000
06A-0019	Huntington Pump Station Electrical Upgrade	Revenues/Reserves	$0	$150,000	$0
06A-0030	54"/48" South Transmission Main Construction	Bond	$32,000,000	$0	$0
080-0013	Provin MT Water Storage System Rehabilitation	Revenues/Reserves	$300,000	$0	$0

Summary for WATER SUPPLY & TRANSMISSION (16 detail records)	Activity Sum	$34,005,000	$1,875,000	$5,750,000
	Percent of Total	64.11%	6.03%	26.79%

WATER DISTRIBUTION

PROJECT ID	PROJECT NAME	SOURCE OF FUNDS	2014 CAPITAL PROGRAM BUDGET FY 2014	2015 - 2016 CAPITAL PROGRAM FY 2015	FY 2016
070-0006	Meter Replacement	Revenues/Reserves	$800,000	$500,000	$500,000
12B-0005	Distribution System Rehabilitation	Revenues/Reserves	$500,000	$500,000	$500,000
12B-0036	Hydrant Replacement Program	Revenues/Reserves	$300,000	$300,000	$300,000
12B-0040	Distribution System Assessment & Design	Revenues/Reserves	$500,000	$500,000	$500,000
12B-0066	Bridge Piping Replacement	Bond	$100,000	$0	$0
12B-0067	21 Street Sewer/Water Main Project	Bond	$2,800,000	$0	$0
Summary for WATER DISTRIBUTION (6 detail records)	Activity Sum		$5,000,000	$1,800,000	$1,800,000
	Percent of Total		9.43%	5.79%	8.39%

WASTEWATER COLLECTION

PROJECT ID	PROJECT NAME	SOURCE OF FUNDS	2014 CAPITAL PROGRAM BUDGET FY 2014	2015 - 2016 CAPITAL PROGRAM FY 2015	FY 2016
002-0009	Pump Station Improvements	Revenues/Reserves	$100,000	$100,000	$100,000
003-0014	Flood Control Pump Station Improvements	Revenues/Reserves	$50,000	$50,000	$50,000
003-0023	CSO Assessment & Design	Bond	$0	$1,000,000	$2,500,000
003-0024	Main Interceptor Design	SRF	$1,650,000	$0	$0
003-0027	Main Interceptor Rehabilitation Construction	Bond	$0	$11,000,000	$0
12A-0018	Collection System Assessment & Design	Revenues/Reserves	$300,000	$300,000	$300,000
12A-0019	Phase I Collection System Asset Management & Maint	Bond	$3,700,000	$3,000,000	$3,000,000

12A-0039	Collection System Rehab/Replacement	Revenues/Reserves	$300,000	$300,000	$300,000
12A-0041	Sewer Rehabilitation -	Bond	$0	$6,000,000	$6,000,000
12A-0042	Sewer Rehabilitation - 21 Street Project	Bond	$6,000,000	$0	$0
Summary for WASTEWATER COLLECTION (10 detail records)		Activity Sum	$12,100,000	$21,750,000	$12,250,000
		Percent of Total	22.81%	69.99%	57.08%

WASTEWATER TREATMENT

			2014 CAPITAL PROGRAM BUDGET	2015 - 2016 CAPITAL PROGRAM	
PROJECT ID	PROJECT NAME	SOURCE OF FUNDS	FY 2014	FY 2015	FY 2016
001-0007	Wastewater Treatment Improvements	Revenues/Reserves	$200,000	$200,000	$100,000
Summary for WASTEWATER TREATMENT (1 detail record)		Activity Sum	$200,000	$200,000	$100,000
		Percent of Total	0.38%	0.64%	0.47%

POWER SUPPLY

			2014 CAPITAL PROGRAM BUDGET	2015 - 2016 CAPITAL PROGRAM	
PROJECT ID	PROJECT NAME	SOURCE OF FUNDS	FY 2014	FY 2015	FY 2016
130-0001	Power Supply Equipment Replacement	Revenues/Reserves	$600,000	$600,000	$600,000
130-0004	42" Bypass Inline Hydro Turbine	Bond	$0	$3,800,000	$0
Summary for POWER SUPPLY (2 detail records)		Activity Sum	$600,000	$4,400,000	$600,000
		Percent of Total	1.13%	14.16%	2.80%

ADMINISTRATION & ENGINEERING

			2014 CAPITAL PROGRAM BUDGET	2015 - 2016 CAPITAL PROGRAM	
PROJECT ID	PROJECT NAME	SOURCE OF FUNDS	FY 2014	FY 2015	FY 2016
090-0005	Commission Vehicles	Revenues/Reserves	$540,000	$600,000	$600,000
090-0007	Communications Equipment	Revenues/Reserves	$80,000	$50,000	$60,000

090-0009	Computers, Servers, Copiers	Revenues/Reserves	$145,000	$100,000	$100,000
090-0010	Building & Structure Improvements	Revenues/Reserves	$105,000	$100,000	$100,000
090-0011	Operating Equipment	Revenues/Reserves	$165,000	$100,000	$100,000
090-0015	SCADA System	Revenues/Reserves	$100,000	$100,000	$0
Summary for ADMINISTRATION & ENGINEERING (6 detail records)		**Activity Sum**	**$1,135,000**	**$1,050,000**	**$960,000**
		Percent of Total	**2.14%**	**3.38%**	**4.47%**

	FY 2014	FY 2015	FY 2016
Revenue/Reserves	**$6,790,000**	**$6,275,000**	**$5,910,000**
Bond*	**$46,250,000**	**$24,800,000**	**$15,550,000**
Grand Total	**$53,040,000**	**$31,075,000**	**$21,460,000**

*** Includes SRF funding source**

Three Year Capital Improvement Program for Fiscal Years 2015 - 2017
Including One Year Capital Program Budget for Fiscal Year 2015

As approved by the Commission On Thursday, June 12, 2014

PROJECT ID	PROJECT NAME	FUNDING SOURCE	2015 CAPITAL PROGRAM BUDGET	2016 - 2017 CAPITAL PROGRAM	
004-0003	Land Acquisition	Revenues/Reserves	$0	$0	$0
004-0007	Dam Maintenance/Various Locations	Revenues/Reserves	$150,000	$425,000	$0
004-0019	Watershed Roads	Revenues/Reserves	$0	$0	$25,000
004-0026	Intake Dam Rehabilitation	Bond	$0	$400,000	$5,000,000
005-0005	Lagoon Cleaning	Revenues/Reserves	$93,000	$100,000	$100,000
005-0024	Coagulant Feed and Mixing System	Revenues/Reserves	$200,000	$0	$0
005-0026	Treatment System Assessment & Design	Revenues/Reserves	$0	$500,000	$300,000
005-0027	Water Treatment System Improvements	Revenues/Reserves	$200,000	$200,000	$200,000
005-0033	West Parish Filters Road & Drainage Improvements	Revenues/Reserves	$0	$0	$125,000
005-0034	WPF Emergency Generator Replacement - Design	Revenues/Reserves	$0	$0	$0
005-0036	WPF Emergency Generator Replacement-Construction	Bond	$0	$0	$0
005-0037	Raw Water Piping & Control Valve Redundancy	Bond	$0	$0	$250,000
005-0039	DBP Stage II Compliance Upgrade	Bond	$0	$0	$400,000
005-0040	WPF Clear well Rehabilitation	Bond	$0	$0	$400,000
005-0041	Rehabilitation of Ludlow SSF Distribution Struc.	Revenues/Reserves	$0	$0	$0
06A-0008	Transmission System Assessment & Design	Revenues/Reserves	$0	$250,000	$250,000
06A-0014	Transmission System Rehabilitation	Revenues/Reserves	$100,000	$100,000	$100,000
06A-0016	NOVA/Chicopee Crossing	SRF	$0	$0	$0

06A-C017	NOVA/Chicopee Crossing Phase II	Bond	$0	$3,000,000	$0
06A-C019	Huntington Pump Station Electrical Upgrade	Revenues/Reserves	$75,000	$75,000	$0
06A-C025	South Transmission Main Rehabilitation	SRF	$0	$0	$0
06A-C028	Huntington Pipe Repair	Revenues/Reserves	$0	$0	$0
06A-C030	54"/48" South Transmission Main Construction	SRF	$0	$0	$0
06A-C031	South Transmission Main Design & Special Services	Bond	$0	$0	$0
06A-C032	54"/48" S. Transmission Main Construction-Non SRF	Revenues/Reserves	$0	$0	$0
080-0012	Provin MT Reservoir Tank II SRF	SRF	$0	$0	$0
080-0013	Provin MT Water Storage System Rehabilitation	Revenues/Reserves	$0	$250,000	$0
Summary for (27 detail records)		Sum	$818,000	$5,300,000	$7,150,000
		Percent of Total	2.25%	19.76%	9.52%

PROJECT ID	PROJECT NAME	FUNDING SOURCE	2015 CAPITAL PROGRAM BUDGET	2016 - 2017 CAPITAL PROGRAM	
070-0006	Meter Replacement	Revenues/Reserves	$1,200,000	$1,200,000	$1,200,000
12B-0005	Distribution System Rehabilitation	Revenues/Reserves	$500,000	$500,000	$900,000
12B-0036	Hydrant Replacement Program	Revenues/Reserves	$300,000	$300,000	$300,000
12B-0040	Distribution System Assessment & Design	Revenues/Reserves	$0	$250,000	$500,000
12B-0045	Colton Street Site Improvements-2	Revenues/Reserves	$0	$0	$0
12B-0048	Clean & Line State Street Ludlow Mill	Bond	$0	$0	$0
12B-0051	Skyridge/Worcester St Booster Station	Bond	$750,000	$0	$0
12B-0066	Bridge Piping Replacement	Bond	$0	$0	$0
12B-0067	21 Street Sewer/Water Main Project	Bond	$0	$0	$0
12B-0070	Distribution System Main Replacement	Bond	$0	$3,000,000	$0
Summary for (10 detail records)		Sum	$2,750,000	$5,250,000	$2,900,000
		Percent of Total	7.56%	19.57%	3.86%

PROJECT ID	PROJECT NAME	FUNDING SOURCE	2015 CAPITAL PROGRAM BUDGET	2016 - 2017 CAPITAL PROGRAM	
001-0007	Wastewater Treatment Improvements	Revenues/Reserves	$0	$150,000	$320,000
001-0009	Wastewater Treatment O&M Evaluation	Revenues/Reserves	$0	$0	$0
001-0010	SRWTF Electrical Distribution Upgrade	Bond	$500,000	$500,000	$1,000,000
Summary for (3 detail records)		Sum	$500,000	$650,000	$1,320,000
		Percent of Total	1.37%	2.42%	1.76%

PROJECT ID	PROJECT NAME	FUNDING SOURCE	2015 CAPITAL PROGRAM BUDGET	2016 - 2017 CAPITAL PROGRAM	
002-0009	Pump Station Improvements	Revenues/Reserves	$0	$240,000	$240,000
003-0013	CT River CSO Ctrl Phase I CSO 007&049 Separation	Bond	$0	$0	$0
003-0014	Flood Control Pump Station Improvements	Revenues/Reserves	$0	$150,000	$150,000
003-0017	CT River CSO Control Phase I SRF	SRF	$0	$0	$0
003-0018	CSO LTCP & Washburn St. Prelim Design	Bond	$0	$0	$0
003-0019	CSO/Sewer GIS Mapping & Hydraulic Model	Revenues/Reserves	$0	$0	$0
003-0021	Washburn St Separation Design & Construction	Bond	$0	$0	$0
003-0024	Main Interceptor Design	Bond	$0	$0	$0
003-0025	Washburn St CSO Construction	SRF	$0	$0	$0
003-0028	CSO Phase II-York St Station & River Cross Design	Bond	$1,000,000	$2,000,000	$3,000,000
003-0029	CSO Phase II York St / River Crossing-Construction	SRF	$0	$0	$52,500,000
003-0030	CT River CSO Ctrl Phase I CSO 007&049 Separation-2	Revenues/Reserves	$0	$0	$0
003-0031	CSO LTCP & Washburn St. Prelim Design-2	Revenues/Reserves	$0	$0	$0
003-0032	Washburn St Separation Design & Construction-2	Revenues/Reserves	$0	$0	$0
12A-0018	Collection System Assessment & Design	Revenues/Reserves	$500,000	$500,000	$500,000
12A-0019	Phase I Collection System Asset Management & Maint	Bond	$0	$0	$0

12A-0021	Main Interceptor & System Improvement - Non-SRF	Bond	$7,050,000	$0	$0
12A-0022	Main Interceptor & System Improvement-SRF	SRF	$17,950,000	$0	$0
12A-0023	Phase II Collection System Asset Management-Bond	Bond	$3,000,000	$0	$0
12A-0024	Phase II Collection System Asset Management-Rev	Revenues/Reserves	$0	$2,750,000	$250,000
12A-0027	Phase I Collection System Asset Management-2	Revenues/Reserves	$0	$0	$0
12A-0038	Sewer Rehabilitation-Pine, Ashley, Lebanon, Bay St	Bond	$0	$0	$0
12A-0039	Collection System Rehab/Replacement	Revenues/Reserves	$0	$0	$350,000
12A-0040	Manhole Rehabilitation	Revenues/Reserves	$0	$0	$0
12A-0041	Sewer Rehabilitation -	Bond	$0	$2,000,000	$3,500,000
12A-0042	Sewer Rehabilitation - 21 Street Project	Bond	$0	$0	$0
12A-0049	Allen, Bradley, Spruce St Sewer Replacement	Bond	$0	$0	$0
12A-0050	Collection System Asset Management & Maintenance	Revenues/Reserves	$0	$0	$150,000
Summary for (28 detail records)		Sum	$29,500,000	$7,640,000	$60,640,000
		Percent of Total	81.07%	28.48%	80.78%

PROJECT ID	PROJECT NAME	FUNDING SOURCE	2015 CAPITAL PROGRAM BUDGET	2016 - 2017 CAPITAL PROGRAM	
130-0001	Power Supply Equipment Replacement	Revenues/Reserves	$0	$600,000	$600,000
130-0002	Unit 3 Hydro-Generator Overhaul	Bond	$0	$0	$1,000,000
130-0003	Overhaul of Hydro-Generator Unit 1	Bond	$0	$0	$0
130-0004	42" Bypass Inline Hydro Turbine	Bond	$0	$0	$0
Summary for (4 detail records)		Sum	$0	$600,000	$1,600,000
		Percent of Total	0.00%	2.24%	2.13%

PROJECT ID	PROJECT NAME	FUNDING SOURCE	2015 CAPITAL PROGRAM BUDGET	2016 - 2017 CAPITAL PROGRAM	
090-0005	Commission Vehicles	Revenues/Reserves	$948,000	$848,000	$1,000,000
090-0007	Communications Equipment	Revenues/Reserves	$32,000	$60,000	$60,000

090-0009	Computers, Servers, Copiers	Revenues/Reserves	$125,500	$100,000	$100,000
090-0010	Building & Structure Improvements	Revenues/Reserves	$225,000	$180,000	$100,000
090-0011	Operating Equipment	Revenues/Reserves	$390,000	$100,000	$100,000
090-0012	Colton St. Structural Improvements	Bond	$0	$0	$0
090-0015	SCADA System	Revenues/Reserves	$100,000	$100,000	$100,000
090-0016	Information Systems	Revenues/Reserves	$0	$0	$0
090-0017	Resource Conservation Program	Revenues/Reserves	$0	$0	$0
090-0018	WPF SCADA System Construction	Bond	$0	$0	$0
090-0019	JJS Operation Center Master Plan Construction	Bond	$1,000,000	$0	$0
090-0020	Construction and Equipment Storage Facility	Bond	$0	$6,000,000	$0
10A-0003	Maintenance Management System & Integration	Revenues/Reserves	$0	$0	$0
12B-0038	Colton Street Site Improvements	Bond	$0	$0	$0
Summary for (14 detail records)		Sum	$2,820,500	$7,388,000	$1,460,000
		Percent of Total	7.75%	27.54%	1.94%

Grand Total		FY15	FY16	FY17
	Revenue	$5,138,500	$9,928,000	$8,020,000
	Bond	$31,250,000	$16,900,000	$67,050,000
	Total	$36,388,500	$26,828,000	$75,070,000

SWSC Operating Budget

For the Year Ending 6/30/15

By Cost Center, and Object		Two Years Ago	Last Year	Current Budget	Current Half Year	Requested	Notes
430-100 - Engineering		***2,283,892***	***2,460,728***	***2,509,839***	***1,366,907***	***2,[illegible]2,933***	
5101	Per Serv- Reg	1,475,641	1,557,186	1,527,890	725,112	1,628,190	
5107	Per Serv- O.t.	0	42	0	0	0	
5108	Shift Diff	0	0	0	0	0	
5171	Med Tax	16,482	16,231	16,740	8,817	20,700	
5174	Retirement	406,050	414,320	443,930	443,930	473,440	
5175	Insurance	218,598	235,902	252,830	109,670	251,600	
5177	Worker's Comp	247	65,720	50,080	37,100	53,060	
5178	Unemployment	1,488	1,713	3,380	106	3,580	
5241	Repairs & Maint-Vehicle	19,595	19,604	25,000	4,161	25,000	
5243	Communications Equip	95	89	250	0	250	Base request on your needs as Leo also adds $$ to this acct.
5247	Repair Operating Equip	0	163	0	0	0	
5249	Rep & Maint-misc	678	184	0	255	0	
5306	Engineering & Arch	36,317	56,607	75,000	10,010	50,000	Typical annual amount, varies annually
5383	Purchased Sevices	41	0	0	0	0	
5414	Diesel	1,506	1,322	2,000	71	0	1 Vehicle transferred to 451-510
5422	Office Supplies	3,489	4,573	4,000	1,227	4,000	Typical annual amount, varies annually
5431	Mechanics/engineer	0	10	0	0	0	
5437	Paint & Materials	0	0	0	482	2,000	From inventory $915 spent @ 1/2 yr
5439	Miscellaneous	34	36	0	23	0	
5454	Custodial Supplies	429	441	500	0	0	CCTV no longer under E&YS
5481	Vehicular Parts Etc	29	0	0	5	0	
5484	Vehicular Fuel	24,471	27,073	29,000	13,959	29,000	
5533	Service Line Materials	116	448	0	32	0	
5534	Hydrants & Repair Parts	0	283	0	0	0	
5535	Main Line Materials	476	101	0	0	0	
5584	Safety Items	406	11	2,000	15	2,000	varies depending on projects

SWSC Operating Budget

For the Year Ending 6/30/15

By Cost Center, and Object		Two Years Ago	Last Year	Current Budget	Current Half Year	Requested	Notes
5856	Small Tools	4,001	2,283	2,000	733	2,000	Misc. for field work
5860	Operating Equipment	17,991	9,019	25,000	11,199	25,000	$11K additional equipment this year, Trip
5861	Add'l Equipment/Other	0	0	0	0	0	
5920	Depreciation	55,712	47,365	50,239	0	53,113	

SWSC Operating Budget

For the Year Ending 6/30/15

By Cost Center, and Object		Two Years Ago	Last Year	Current Budget	Current Half Year	Requested	Notes
440-170 - SERTS		***257,209***	***252,727***	***334,939***	***93,301***	***92,552***	
5101	Per Serv- Reg	21,332	32,107	73,190	0	0	
5171	Med Tax	303	436	810	0	0	
5174	Retirement	23,110	19,940	21,670	21,670	0	
5175	Insurance	11,821	10,752	12,120	5,227	0	
5177	Worker's Comp	0	0	2,400	0	0	
5178	Unemployment	0	42	170	0	0	
5241	Repairs & Maint-Vehicle	305	961	2,000	190	2,000	Only one vehicle in SERTS budget.
5307	Employee Training	63,672	47,093	75,000	30,816	85,000	$75,000 Safety Training & $10,000 IT Training
5317	Management Services	0	0	0	0	100,000	EHS Services
5383	Purchased Sevices	0	1,700	5,000	0	5,000	Disposal of wastes (asbestos, etc.)
5422	Office Supplies	153	434	2,000	1,700	2,000	Split with IPP, FOG & CCCP.
5481	Vehicular Parts Etc	219	498	1,500	0	1,500	One vehicle
5484	Vehicular Fuel	707	2,753	2,300	928	3,000	Original Amount $2,000 Decreased only one vehicle Joe K. $3,000
5506	Medical - Disposable	1,992	1,044	2,000	0	2,000	First Aid Kits & AED Inspections
5582	Clothes/Uniforms	1,950	0	0	0	0	
5584	Safety Items	95,085	107,961	100,000	30,732	75,000	Winches, Tri-pods & Gas Monitoring Equipment
5585	Miscellaneous	89	4,849	10,000	880	5,000	Safety Items Contingency
5861	Add'l Equipment/Other	31,965	17,652	20,000	1,158	17,000	Monitoring Supplies
5920	Depreciation	4,505	4,505	4,779	0	5,052	

SWSC Operating Budget

For the Year Ending 6/30/15

By Cost Center, and Object	Two Years Ago	Last Year	Current Budget	Current Half Year	Requested	Notes
450-201 - Water Supply Admin	***424,794***	***365,038***	***431,080***	***219,721***	***464,223***	
5101 Per Serv- Reg	254,930	210,346	251,630	125,214	260,130	
5107 Per Serv- O.t.	0	0	0	0	0	
5108 Shift Diff	0	0	0	0	0	
5171 Med Tax	1,014	1,681	2,760	1,072	3,310	
5174 Retirement	77,860	67,550	74,490	74,490	77,070	
5175 Insurance	39,921	36,682	41,640	18,048	40,200	
5177 Worker's Comp	0	0	8,250	0	8,480	
5178 Unemployment	225	248	560	0	580	
5484 Vehicular Fuel	4,297	3,984	4,500	897	4,500	
5765 Bad Debt Expense	0	0	0	0	0	
5918 Loan Service Charges	2,000	0	0	0	0	
5920 Depreciation	44,547	44,547	47,250	0	49,953	

SWSC Operating Budget

For the Year Ending 6/30/15

By Cost Center, and Object	Two Years Ago	Last Year	Current Budget	Current Half Year	Requested	Notes
451-401 - FOG & Local W.W. Admin	***150,542***	***162,017***	***219,460***	***89,843***	***96,800***	
5101 Per Serv- Reg	76,714	87,470	116,720	43,451	118,990	
5171 Med Tax	1,065	1,232	1,280	610	1,520	
5174 Retirement	43,640	44,590	34,550	34,550	35,250	
5175 Insurance	22,480	24,244	19,320	8,383	18,390	
5177 Worker's Comp	0	0	3,830	0	3,880	
5178 Unemployment	133	134	260	0	270	
5241 Repairs & Maint-Vehicle	233	660	2,000	1,765	0	Submitted request for new vehicle
5246 Rep & Maint/Office Equipment	0	676	0	0	500	In need of office equipment
5312 Printing & Binding	776	1,412	15,000	325	10,000	Decreased
5341 Postage	15	0	5,000	0	2,500	Decreased postage
5343 Advertising	1,279	0	3,000	550	2,500	FOG program moving forward
5422 Office Supplies	48	1,392	1,500	0	1,500	Split with IPP & CCCF
5484 Vehicular Fuel	0	207	1,000	110	500	
5512 Software	0	0	15,000	0	0	IPP/FSE Software
5854 Furniture & Fixtures	0	0	1,000	100	1,000	Office Organization
5920 Depreciation	4,160	0	0	0	0	

SWSC Operating Budget

For the Year Ending 6/30/15

By Cost Center, and Object	Two Years Ago	Last Year	Current Budget	Current Half Year	Requested	Notes
451-410 - Flood Control	***75,676***	***75,676***	***80,267***	***0***	***34,859***	
5920 Depreciation	75,676	75,676	80,267	0	34,859	

SWSC Operating Budget

For the Year Ending 6/30/15

By Cost Center, and Object	Two Years Ago	Last Year	Current Budget	Current Half Year	Requested	Notes
451-412 - Indian Orchard P.S.	***848,472***	***803,792***	***1,316,894***	***398,402***	***1,[illegible]9,854***	
5212 Electric	304,250	272,800	320,000	158,224	[illegible]60,000	
5243 Communications Equip	0	0	250	0	250	Leo
5384 WWTP Contract Services	45,994	46,993	47,781	23,832	48,325	
5910 Long Term Debt/Principal	0	0	476,391	0	[illegible]90,563	
5915 Long Term Debt/Interest	435,228	421,513	407,831	207,321	[illegible]93,934	
5918 Loan Service Charges	18,824	18,311	17,785	9,025	17,246	
5920 Depreciation	44,176	44,176	46,856	0	49,536	

SWSC Operating Budget

For the Year Ending 6/30/15

By Cost Center, and Object	Two Years Ago	Last Year	Current Budget	Current Half Year	Requested	Notes
451-420 - Other Sanitary Pumps	***514,425***	***479,086***	***638,236***	***155,779***	***552,470***	
5212 Electric	239,208	207,845	210,000	104,574	220,000	
5213 Natural Gas	10,911	11,684	13,000	1,088	12,200	
5910 Long Term Debt/Principal	0	0	153,650	0	155,750	
5915 Long Term Debt/Interest	105,391	100,643	94,462	48,767	87,836	
5917 Series A 2007 Unamoritized Ref	1,350	1,350	0	1,350	0	
5920 Depreciation	157,564	157,564	167,124	0	76,684	

SWSC Operating Budget

For the Year Ending 6/30/15

By Cost Center, and Object		Two Years Ago	Last Year	Current Budget	Current Half Year	Requested	Notes
451-502 - Operations Mgmt WW		***155,919***	***160,755***	***174,836***	***97,274***	***176,743***	
5101	Per Serv- Reg	106,028	108,149	112,470	55,156	114,660	
5171	Med Tax	1,465	1,497	1,240	731	1,460	
5174	Retirement	29,030	30,200	33,300	33,300	33,970	
5175	Insurance	14,922	16,444	18,620	8,087	17,720	
5177	Worker's Comp	0	0	3,690	0	3,740	
5178	Unemployment	50	67	250	0	260	
5241	Repairs & Maint-Vehicle	24	0	600	0	0	
5920	Depreciation	4,399	4,399	4,666	0	4,933	

SWSC Operating Budget

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By Cost Center, and Object	Two Years Ago	Last Year	Current Budget	Current Half Year	Requested	Notes
451-510 - Sewer Collection Services	***6,519,890***	***7,023,700***	***10,509,090***	***3,265,876***	***13,[illegible]529***	
5101 Per Serv- Reg	1,177,265	1,264,670	1,445,990	638,794	[illegible]25,220	
5107 Per Serv- O.t.	116,469	98,184	0	43,621	0	
5108 Shift Diff	74	5	0	0	0	
5171 Med Tax	15,327	16,780	15,850	8,487	[illegible]1,940	
5174 Retirement	355,580	366,100	397,940	397,940	[illegible]78,120	
5175 Insurance	206,970	222,621	239,280	103,753	[illegible]86,590	
5177 Worker's Comp	31,275	11,444	47,390	10,773	56,230	
5178 Unemployment	2,128	1,916	3,200	122	3,800	
5241 Repairs & Maint-Vehicle	190,297	137,985	125,000	31,857	[illegible]00,000	Every day vehicle repairs
5243 Communications Equip	2,619	4,677	3,000	2,507	9,000	3000 for new vehicles, handheld radios and 1500 for additional employees/6000 Leo
5244 Paving	84,534	71,052	150,000	30,765	[illegible]02,300	$150,000 Contracted pavement management, $92,300 Street paving
5247 Repair Operating Equip	0	61,648	80,000	41,047	[illegible]0,000	Large equipment, vactor truck repairs and CCTV equipment repair
5249 Rep & Maint-misc	1,992	4,723	10,000	3,465	10,000	Small tool repairs, smart camera repairs etc.
5271 Rent & Lease Equip	1,026	15,384	145,000	128,692	37,000	Large equipment rentals primarily for main line work.
5291 Waste Management	60	278	1,000	438	2,000	Additional waste disposal and removal
5292 Tree & Brush Removal	108,078	15,450	25,000	0	10,000	Easement clearing
5306 Engineering & Arch	0	11,528	75,000	48,014	80,000	CMOM and CSO Reporting, Rainfall Analysis, Model Calibration
5319 Police Detail	36,406	44,860	65,000	34,463	80,000	Additional crew details and bulk of additional cost for CCTV/Vac work
5382 Hired Equipment	0	10,205	20,000	10,265	22,000	Heavy trucks, equipment deliveries, heavy sewer cleaning.

SWSC Operating Budget

For the Year Ending 6/30/15

By Cost Center, and Object		Two Years Ago	Last Year	Current Budget	Current Half Year	Requested	Note
5383	Purchased Sevices	18,945	158,745	202,000	68,217	2,000	Rodent control, Vehicle upgrades. Contracted Services (NO Monitoring (Price Escalation), specialized repair services, welding, vehicle modifications, CCTV repairs
5384	WWTP Contract Services	919,873	939,853	955,616	476,640	966,509	
5414	Diesel	74,084	72,662	95,000	35,569	86,500	
5422	Office Supplies	2,936	4,033	4,000	2,720	5,000	Main office and CCTV office
5433	Plumbing	969	1,052	1,000	649	1,500	Garage repairs and misc plumbing need.
5434	Concrete Etc	22,741	24,101	25,000	14,457	35,000	Additional crew concrete work, flowable fill
5435	Hardware	2,183	3,226	4,000	2,070	5,000	Small parts and associated parts with internal repairs, additional cost for CCTV
5436	Lumber / Wood	573	3,261	3,000	719	4,000	Concrete forms and small building projects in house
5437	Paint & Materials	0	644	1,000	1,302	2,000	Garage painting and other in house painting needs
5439	Miscellaneous	12,140	15,854	25,000	17,949	25,000	Most stock room items, additional cost for additonal crews including cctv and dig up.
5463	Seed	1,274	1,039	1,500	457	1,500	Additional crew cost for property repairs
5464	Trees, Shrubs & Plants	0	0	1,500	0	1,000	Property repairs
5481	Vehicular Parts Etc	10,926	14,630	15,000	11,435	17,000	Additional crew costs including in house vehicle repairs, tool boxes, lights.
5484	Vehicular Fuel	50,142	52,286	51,000	27,677	48,000	
5531	Chemicals	16,707	38,563	25,000	23,576	35,000	Increased amount of sewer mains tereated with degreaser to treat FOG

SWSC Operating Budget

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By Cost Center, and Object		Two Years Ago	Last Year	Current Budget	Current Half Year	Requested	Notes
5532	Mixes	94,732	100,376	150,000	77,198	140,000	Stone, gravel, asphalt, cold patch etc.Additional cost for extra crew materials
5533	Service Line Materials	12,504	30,778	50,000	9,211	55,000	New service push camera, associated parts for house service repairs, bedding equipment, cutters
5535	Main Line Materials	38,111	108,779	105,000	71,651	140,000	Manholes, pipe, other associated parts with main line repairs. Equipment associated with main line work.
5545	Misc Public Works Supplies	1,821	4,443	5,000	3,686	5,000	Misc needed parts for unspecified repairs
5584	Safety Items	8,051	18,662	10,000	9,938	12,000	Trench box, air monitor cartridges, confined space equipment, traffic safety items, etc.
5585	Miscellaneous	481	911	1,000	648	1,000	Misc needs
5692	Fees & Permits	0	0	10,000	0	10,000	RR Easements & Fees. Utility Agreements
5856	Small Tools	4,175	15,266	15,000	9,373	17,500	Hand tools, small power tools, additional cost for additional staff.
5860	Operating Equipment	244	27,475	30,000	19,854	50,000	CCTV equipment, saws, blades, compactor, other heavy power tools
5861	Add'l Equipment/Other	11,437	15,767	15,000	5,304	40,000	Small 10,000lb trailer, root cutters nozzles, other associated equipment.
5910	Long Term Debt/Principal	0	0	2,496,774	0	4,110,001	
5915	Long Term Debt/Interest	1,747,900	1,723,872	1,913,290	825,919	2,552,931	
5918	Loan Service Charges	39,219	77,942	166,373	14,656	181,084	
5920	Depreciation	1,097,624	1,209,970	1,283,387	0	1,356,804	

SWSC Operating Budget

For the Year Ending 6/30/15

By Cost Center, and Object		Two Years Ago	Last Year	Current Budget	Current Half Year	Requested	Notes
452-601 - Treatment Plant Administrati		***13,894,553***	***13,977,224***	***15,588,500***	***6,781,576***	***15,[illegible]3,280***	
5101	Per Serv- Reg	114,397	116,685	121,350	59,509	[illegible]3,710	
5108	Shift Diff	0	0	0	0	0	
5171	Med Tax	1,633	1,666	1,330	850	1,580	
5174	Retirement	31,940	32,580	35,920	35,920	[illegible]6,650	
5175	Insurance	16,472	17,709	20,090	8,679	[illegible]9,120	
5177	Worker's Comp	0	0	3,980	0	4,040	
5178	Unemployment	50	67	270	0	280	
5212	Electric	1,550,148	1,504,102	1,750,000	722,522	1,[illegible]0,000	
5213	Natural Gas	107,025	113,877	140,000	56,340	[illegible]8,000	
5384	WWTP Contract Services	9,946,380	10,121,777	10,238,051	5,734,876	10,296,469	
5691	Taxes	13,958	7,788	14,591	0	[illegible]5,417	
5861	Add'l Equipment/Other	0	0	0	0	0	
5910	Long Term Debt/Principal	0	0	1,247,842	0	1,[illegible]91,131	
5915	Long Term Debt/Interest	301,865	250,751	208,936	54,037	[illegible]37,138	
5917	Series A 2007 Unamoritized Ref	6,943	6,943	0	6,943	0	
5918	Loan Service Charges	4,976	4,515	4,043	2,141	3,555	
5920	Depreciation	1,699,007	1,699,007	1,802,097	0	1,[illegible]05,190	
5941	Amoritize Deferred Charges	99,759	99,759	0	99,759	0	
5942	Amoritize Rev Collected in Adv	0	0	0	0	0	

SWSC Operating Budget

For the Year Ending 6/30/15

By Cost Center, and Object		Two Years Ago	Last Year	Current Budget	Current Half Year	Requested	Notes
493-901 - IPP Admin		***226,704***	***258,136***	***303,097***	***147,816***	***[illegible]0,934***	
5101	Per Serv- Reg	131,489	134,025	143,510	71,351	16,850	
5107	Per Serv- O.t.	0	0	0	0	0	
5108	Shift Diff	0	0	0	0	0	
5171	Med Tax	1,774	1,815	1,580	978	1,870	
5174	Retirement	37,210	38,530	42,480	42,480	43,510	
5175	Insurance	18,992	20,871	23,750	10,257	32,700	
5177	Worker's Comp	167	0	4,710	0	4,790	
5178	Unemployment	102	134	320	0	330	
5241	Repairs & Maint-Vehicle	243	973	3,500	59	2,500	Truck [illegible]olting older
5246	Rep & Maint/Office Equipment	227	114	750	0	750	Office [illegible]rganization
5247	Repair Operating Equip	0	0	750	0	750	pH pr[illegible]es, instrume[illegible]ion supp[illegible]
5249	Rep & Maint-misc	0	0	0	0	0	
5304	Conferences & Seminars	575	0	1,000	0	1,000	EPA [illegible]nual Worksh[illegible] in May
5306	Engineering & Arch	4,363	18,814	20,000	0	5,000	Conti[illegible]gency to discu[illegible]s with EPA local in its
5312	Printing & Binding	649	49	1,000	443	1,000	Reports, Tags, misc.
5315	Tests / Inspec	22,973	27,459	25,000	20,168	25,000	Most sampling done after June
5341	Postage	479	456	750	27	500	Certi[illegible] mail for permits & enfor[illegible]ment
5342	Telephone	120	120	200	60	180	
5343	Advertising	0	0	75	0	75	SIU SWC Notice Conti[illegible]ency
5383	Purchased Sevices	458	495	500	495	500	Lab Equipment Calibration
5422	Office Supplies	283	1,062	600	69	600	IPP Office Supplies/ Split with CCCF
5433	Plumbing	0	0	0	0	0	
5484	Vehicular Fuel	2,687	1,426	2,100	534	1,500	Fuel for one vehicle
5507	Misc Lab Supplies	1,584	329	1,000	891	1,200	Lab Supplies
5512	Software	1,102	4,783	15,000	0	5,000	IPP/FOG Software
5584	Safety Items	0	939	1,500	0	1,500	Gas Meter & Replacement Sensors

SWSC Operating Budget

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By Cost Center, and Object	Two Years Ago	Last Year	Current Budget	Current Half Year	Requested	Notes
5711 Travel In State	25	0	100	0	100	IPP Training
5712 Subsis In State	0	0	500	4	500	IPP Training
5721 Travel Out Of State	586	5	1,000	0	1,000	EPA Annual Workshop in May
5722 Subsis Out Of State	616	672	1,000	0	1,000	EPA Annual Workshop in May
5731 Dues & Membership	0	0	50	0	50	Pretreatment Forum
5782 Reserve For Contingen's	0	0	0	0	500	Contingency
5856 Small Tools	0	0	0	0	0	
5860 Operating Equipment	0	0	5,000	0	5,000	Misc. IPP Inspection Sampling Supplies
5861 Add'l Equipment/Other	0	0	0	0	0	
5920 Depreciation	0	5,065	5,372	0	5,679	
Grand Totals	***52,481,946***	***53,451,387***	***64,248,397***	***24,697,282***	***67,597,850***	